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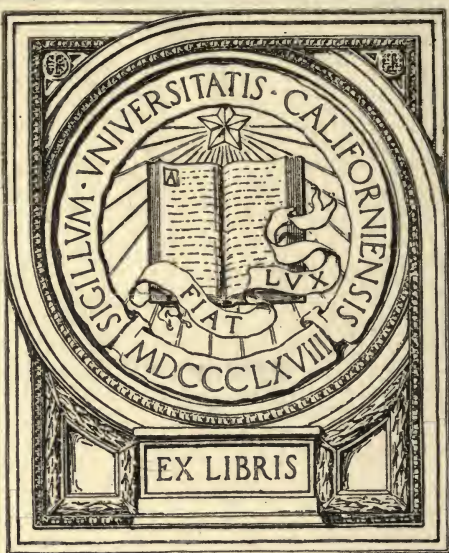


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THE  
REORGANIZATION MOVEMENT  
IN THE GRAMMAR GRADES  
OF INDIANA PUBLIC  
SCHOOLS

BY  
CHILDS

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AN INVESTIGATION  
OF CERTAIN PHASES OF  
THE REORGANIZATION MOVEMENT  
IN THE GRAMMAR GRADES  
OF INDIANA PUBLIC  
SCHOOLS

BY  
HUBERT GUY CHILDS, Ph.D.

Submitted in partial fulfillment of the requirements for the  
degree of Doctor of Philosophy, in the Faculty of  
Philosophy, Columbia University.

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Numerous superintendents, principals, teachers, and school officials have coöperated with me in assembling the data presented in the following pages, and I am glad to express my obligation to them for their assistance, without which this study would have been impossible.





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## A. INTRODUCTION.

### 1. INTRODUCTORY STATEMENT.

The rapid economic expansion of the last half of the nineteenth century resulted in a marked shifting of population from a rather primitive rural life to a complex city life, a high degree of specialization in labor and the removal of labor from the home, a lack of educative employment for city youth, an increase in wealth and leisure, and an increased demand upon the school for a longer and somewhat modified type of training.

Like other institutions the school was conservative and responded slowly to the increasing demand for a longer term and compulsory attendance, and still more slowly did the school and the public become conscious that the traditional school program needed radical reorganization to supply the elements taken from the life of the child by the changed social conditions and to enable him adequately to solve the new social problems arising out of these changed and changing conditions.

The first demand for reorganization came chiefly from those interested in higher education from the point of view of economy of time in preparation for professional work. Naturally the proposal was in the form of an extension of the work of the secondary school into the grammar grades. In the report of the Committee of Ten on Secondary Education<sup>1</sup> such a downward extension of its work was urged by practically every academic department group represented in the high school. In other words they favored a six year secondary school above a six year elementary school as best designed to accomplish the desired reform.

While the committee held that the high school should minister to the needs of the vast majority of its pupils who are not going to college, yet the report leaves the impression that the committee considered that what was best for those going to college was best for all. The report says, "Ninety-eight teachers unanimously declare that every subject taught at all in a secondary school should be taught in the same way and to the same extent to

<sup>1</sup> Report of the Committee of Ten of the N. E. A. 1893:14 and 15.

every pupil so long as he pursues it, no matter what the probable destination of the pupil may be or at what point his education is to cease."<sup>2</sup>

The Committee on the Economy of Time in Education<sup>3</sup> and the Committee on a Six Year Course of Study<sup>4</sup> favor either a shortening of the twelve year period of elementary and secondary education by the earlier introduction of high school subjects or the enrichment of the six year secondary work so that the period of collegiate and professional training may be shortened. While the recommendations for reorganization are broader in scope than those of the previous committee, yet these committees, like the Committee of Ten, appear to view the problem largely from the point of view of the high school and the college.

Only within the last ten years, and chiefly within the last five, has the reorganization movement turned in part from a program of reform along purely academic lines to the inclusion of vocational activities of a broad and varied sort in both the high school and the grammar grades. This is, no doubt, due in considerable degree to the rapidly improving economic conditions among large elements of our population and to the consequent leisure among youth, making a longer period of education possible; to the lengthening of the time of school training and a more rigorous enforcement of compulsory attendance laws; to the increased popularity of the high school as a result of its offering some elective work; to the fact that a rapidly increasing grammar grade and high school enrollment represents every variety of occupational interest as compared with narrow interests in times past; to an increased realization among educators of the conditions of elimination in the upper grades and high school and of the significance of individual differences among children; and to an increasing social consciousness that the school is a social institution whose function is to produce socially efficient citizens thru providing an opportunity for the development of every variety of talent deemed socially desirable.

The Commission on the Reorganization of Secondary Education,<sup>5,6</sup> which has been at work since 1913 and which has issued as yet but few reports of the various sub-committees, advocates

<sup>2</sup> Report of the Committee of Ten of the N. E. A. 1893:17.

<sup>3</sup> Report of the Committee on the Economy of Time in Education. Bul. 38. 1913, U. S. Bureau of Ed.

<sup>4</sup> Report of the Committee on a Six Year Course of Study. Proc. N. E. A. 1901:498-503.

<sup>5</sup> Reorganization of Secondary Education. Bul. 41. 1913, U. S. Bur. of Ed.

<sup>6</sup> Reorganization of English in Secondary Schools. Bul. 2. 1917, U. S. Bur. of Ed. pp. 26-29.



a six year high school organization and a greatly modified and enriched program and differentiated curricula in the junior high school grades as a means of meeting the problems of our complex and democratic society.

Many objections have been raised against the eight-four plan or the usual grammar grade organization prevailing at the present time, among others the following:<sup>7</sup> over-crowded curriculum, duplication and waste, lack of correlation between subjects, unessential and impracticable topics, topics which have a legitimate place in no program, over-worked pupils, inflexible course of study, inadequate articulation of elementary and high school, little consideration for individual differences, promotion based on unsound principles, discipline unsuited to youth, improperly equipped teachers, pupil contact with too few personalities, unpedagogical methods of instruction, too late beginning of some secondary subjects, lack of vocational work, too much elimination, insufficient attention to retarded and superior pupils, insufficient hand work, lack of specific trade training, and an over-mechanical system.

The advantages stated for the reorganized school imply that the opposite of the above named objections are realized. The question may be raised whether most of the objections stated really have anything to do with an eight-four or a six-six type of organization; they relate rather to the spirit of the organization and not to its form, although the six-six plan will make the realization of some factors more probable. In the second place it appears that many of these objections are entirely over-drawn for the average school system of the present time. It may be that educational reformers, like other reformers, delight in setting up supposed conditions which are easy of attack. However, there is a spirit of dissatisfaction in the public mind that is demanding a change in school purposes and organization in line with current social and industrial ideals.

Since 1910 the reorganization has progressed at an accelerated rate. In 1910 there were probably not to exceed a score of schools claiming junior high school or intermediate school organization; in 1914, Briggs<sup>8</sup> reported data from 133 and estimated that at least 60 more had been reported thru other sources; in 1915

<sup>7</sup> Davis, C. O. *Principles and Plans for Reorganizing Secondary Education*. Ch. iv of Johnston's High School Education. N. Y. 1912.

<sup>8</sup> Briggs, T. H. *The Junior High School*. Report of the U. S. Com. of Ed. 1914:135-157.

Bingaman<sup>9</sup> estimated that there were 280 such schools in the country; and a conservative estimate at the present time would probably not place the number below 400.

In spite of the numerous reports of National Education Association committees before 1913, and the numerous reports of school survey committees since that date recommending the reorganization program in grammar grades, and the reports of various investigations, and a voluminous literature on the junior high school movement, there still appears to be the utmost confusion in practice as to standards appropriate to the new movement. Among Indiana so-called junior high schools almost every imaginable degree of variation appears to exist relative to every standard advocated for the reorganized school.

## 2. STATEMENT OF PURPOSES.

This investigation has been undertaken:

- a. To ascertain the nature and extent of the reorganization of instruction and administration in the grammar grades in Indiana public schools:
  - (1) as to its extent, as indicated by the number of schools claiming junior high school standing;
  - (2) as to aims and standards considered desirable by Indiana schoolmen actively engaged in the movement;
  - (3) as to standards of practice actually in vogue in these schools;
  - (4) as to comparisons of so-called junior high schools with other schools.
- b. To measure specifically certain claimed advantages or objections to junior high school organization.
  - (1) The cost of instruction and supervision.
  - (2) Comparative achievements of junior and non-junior schools in certain eighth grade subjects as measured by standard tests.
  - (3) The retention of pupils in grammar grades and high school in junior and non-junior type schools.

## 3. METHODS OF INVESTIGATION AND THEIR LIMITATIONS.

The nature of this investigation is such that no one clear cut method of investigation seems adequate. The movement is of

<sup>9</sup> Bingaman, C. C. A Report on Intermediate or Junior High Schools of the United States Goldfield, Ia. 1915.

too recent origin in Indiana to make the historic mode of treatment valuable, while the general reorganization movement of the past quarter century throughout the United States to 1914 has been well treated by Bunker.<sup>10</sup> Certain phases of the problem lend themselves to statistical treatment, as the measurement of school achievements and the retention of pupils in school, and in part the features of practice in the different schools investigated. The comparative method has been freely used, but the experimental method has not been employed. Rather a variety of types of procedure have been utilized in this investigation.

- a. Theoretical junior high school standards for Indiana schools have been determined from published articles and from the ranking of a definitely formulated list of items by 25 superintendents.
- b. Features of practice generally have been ascertained thru questionnaire returns, and include: (1) type of organization, (2) promotion, (3) housing, (4) enrollments, (5) provision for flexible advancement of individuals and groups, (6) teacher training, experience, and salaries, (7) features of method, (8) social organization, (9) time distribution, (10) cost of instruction and supervision, (11) overlapping of junior and senior high school instruction, (12) program of studies.
- c. The measurement of achievement in certain school subjects by means of standard tests and the measurement of retention among certain pupil groups by the examination of school record cards thru a series of years have constituted problems for special investigation.

The use of the questionnaire method in this investigation is subject to the same limitations as the use of this method generally, namely, incomplete returns for some items, possibly hopes substituted for facts in some cases, and impossibility of verifying the accuracy of the returns in considerable part.

While practically all reports are lacking in some details, the total per cent of replies to the various items for each group of schools is sufficiently high to be considered representative of group tendencies. Also in large degree specific statistical and other fact items have been called for in the questionnaire and

<sup>10</sup> Bunker, F. A. *Reorganization of the Public School System*. Bul. 8. 1916, U. S. Bur. of Ed.



not subjective opinions. As a result the replies are as a rule not subject to emotional bias but are based upon tangible school records.

So far as possible checks have been applied to verify the accuracy of significant data. Statements of subject offerings for the grades in question and the number of teachers giving junior high school instruction have been verified or corrected by reference to the school's schedule of work for the term for which the data were collected, from the state high school directory, and by correspondence or conference with teachers other than the person filling out the original questionnaire blank. Teachers of English and history in all junior and departmental schools were asked for statements showing the nature and emphasis of their work for grade eight as a basis for estimating the extent of the reform of traditional procedure. About one-half replied. Wherever enrollment data appeared to be of questionable value, the superintendent was asked to check again, and also in some cases the principal or some teacher was asked to submit enrollment data for the period or term involved. Data relative to the cost of instruction in the senior high school and to the overlapping of the teaching staffs of high school and grammar grades have been in part verified by reference to data in my possession relative to cost of instruction in Indiana high schools, an investigation made by the writer in 1915-16.<sup>11</sup> Data for some schools relative to subject offerings in grade nine and to teacher training and experience have been verified by reference to North Central Association reports to which the writer has access. The writer has personally visited about one-third the schools reporting and has been able to note housing and general administrative conditions and programs of study as well as general conditions of instruction and the attitude towards the reorganization movement by teachers and patrons.

In the measurement of achievement in school subjects standard tests were chosen and uniform directions for their administration were sent to each principal in charge. All papers were scored by the writer or immediately under his direction. The two county superintendents and the several high school principals entered into the giving of the tests with a good spirit, and the returns from no school indicate that directions were deviated from in any way.

In the measurement of retention thru half years of attendance

<sup>11</sup> Childs, H. G. *Cost of Instruction in Indiana High Schools*. Bul. of Third Conference on Educational Measurements. Ind. University, Feb. 1917:126-170.

or progress it would be desirable to have more schools in each group for comparison, but only a very limited number of junior high schools have been organized sufficiently long to make these data of value. The limitation of enrollment data as a measure of retention is discussed specifically in connection with the section dealing with retention. A third measure of retention might have been used, namely, the per cent of resident children twelve to eighteen years of age and particularly the per cent fourteen and fifteen years of age who are actually enrolled in school and more specifically in the junior high school or departmental grades. While the State Department requires a statement of the number of fourteen and fifteen year old children enumerated, it requires no report as to the number of these actually in school, and these data, if obtainable from each school office, can be had only with a great expenditure of time. The writer has solicited such data from about seventy schools within the past three years and has not received one usable reply.

To the extent that the schools supplying retention data are from cities which are representative of their junior or departmental groups, the data and the conclusions therefrom have validity. Very specific and clear directions were given for collecting the retention data, and the reports submitted indicate a careful compliance with the directions. There seems to be no reason to question their accuracy. Schools with imperfect records were candid in their statement of the fact and withdrew from participation in the investigation.

It should also be noted that data which may have been entirely accurate in the autumn of 1916 may be completely in error a year later, so rapidly are schools overhauling their traditional procedure.

The writer believes that the inquiry forms were sent to representative schools and that the fifty per cent replying are entirely representative of reorganization conditions in Indiana public schools.

#### 4. LOCATION OF SCHOOLS REPORTING DATA INCLUDED IN THIS INVESTIGATION.

##### a. Those claiming junior high school organization.

Anderson, Battle Ground, Bloomington, Brazil,  
Buck Creek, Clark's Hill, Crawfordsville, Dayton,  
Dunkirk, East Chicago, Elkhart, Evansville,

Gary, Gas City, Gladden, Hartford City, Jackson Township, Monitor, Montmorenci, Mount Vernon, Muncie, New Albany, Oakland City, Princeton, Richmond, Romney, Rushville, Seymour, Stockwell, Vincennes, Washington, Wea, West Lafayette, West Point, Williamsport.

b. Departmental non-junior schools.

Bedford, Bluffton, Cayuga, Clinton, Columbia City, Connersville, Crown Point, Decatur, Franklin, Goshen, Huntington, Kendallville, Kokomo, La Porte, Madison, Marion, Michigan City, Mishawaka, New Castle, Noblesville, North Vernon, Orleans, Plymouth, Portland, Ridgeville, Rochester, Rockport, Royal Center, Salem, Sullivan, Thorntown, Wabash, Waveland, Waynetown, Whiting.

c. Non-departmental non-junior schools.

Akron, Alamo, Angola, Arcadia, Argos, Auburn, Batesville, Bowers, Darlington, Fairmount, Farmland, Greencastle, Ladoga, La Grange, Linden, Loogootee, Medora, Middletown, Montezuma, New Market, New Ross, Union City, Wingate.

d. Schools contributing data on school achievements.

Battle Ground, Buck Creek, Dayton, Gladden, Jackson Township, Montmorenci, Romney, Stockwell, Wea, West Point, Alamo, Bowers, Darlington, Ladoga, Linden, New Market, New Richmond, New Ross, Waveland, Waynetown, Wingate.

e. Schools contributing special data on retention.

Bloomington, Bluffton, East Chicago, Hartford City, Huntington, Michigan City, New Albany, Princeton, Richmond, Wabash.



## B. BODY.

## 1. REORGANIZATION IN INDIANA PUBLIC SCHOOLS.

## a. Extent of the movement as to numbers concerned.

## (1) Representative character of the schools reached.

During the spring, summer, and fall of 1916 questionnaire forms, with a request for coöperation, were sent to the superintendents of schools in all towns and cities in Indiana listed by the 1910 Federal census reports as having (a) 2,000 or more population (110 cities), (b) 1,000 to 1,099, 1,200 to 1,299, 1,500 to 1,599 population, (c) to a few other schools whose superintendents were personally known to the writer, to certain schools reported to have junior high schools in various published articles or known by me personally to claim such organization, and to 12 additional consolidated schools in one county. All schools in Indiana on the North Central Association accredited list for 1915-16 (78) are included in the list. In all 180 inquiry blanks were sent out to as many different schools.

Replies, more or less usable, were received from 92 schools, 55 of these being from the 2,000 or more population class cities, and 37 from schools in smaller communities. The proportion of replies from each group is approximately fifty per cent of the inquires sent out. The replies represent schools in every part of the state and the writer is confident that every school having any serious claim to junior high school organization at the time the questionnaire was sent out has been reached. Thirteen other schools, mostly in the larger cities, indicated departmental teaching in grammar grades but gave no further data, and hence are not included in this study.

## (2) Numbers involved in varying degrees of reorganization.

- (a) Those claiming junior high school organization, (b) those claiming departmental organization only, (c) those having neither.

To obtain a basis of classification for the schools, the following definition of a junior high school was submitted in the questionnaire: "Have you a special organization of grades 7 and 8 or 8 and 9 or 7, 8 and 9 to provide for greater differentiation of studies, easier transition to the high school, longer retention in school, earlier introduction to vocational work, etc. (commonly called a junior high school)?"

In a second paragraph on the type of organization the following was submitted, "Do you have departmental teaching (special teachers for each subject) in grammar grades? In what subjects?"

Practically all schools indicate a greater or less degree of departmental teaching in domestic science, manual training, music, and art. The line between departmental and non-departmental schools has been drawn on the basis of departmental teaching in the usual common studies of the grammar grades, as arithmetic, reading, grammar, history, etc.

Of the 92 schools making usable returns up to March 1917, 39 claimed some degree of junior high school organization, 30 claimed departmental teaching only, and 23 claimed neither form of organization. One of these schools entirely withdrew its claims to junior high school organization in reply to a second inquiry, a second stated that it really had inaugurated departmental teaching only but hoped to add other features later, and three others of the 39 have since disclaimed junior high school organization in reply to a searching questionnaire recently sent out by Doctor Briggs of Teachers' College, Columbia University. These five I have transferred to the departmental school list. One other school, not reporting fully to me directly, reports to Doctor Briggs that it has reorganized on the junior high school basis in January 1917.

According to data in my possession in April, 1917 the 93 towns and cities included in this study are classified as follows on the basis of their own claims: 35 towns or cities have intermediate or junior high school organization, with a total of 38 such schools; 35 have departmental organization only; and 23 are non-departmental schools. Two schools reported by Douglass<sup>1</sup> as junior high schools have withdrawn such claims in connection with this investigation.

(3) Supplementary information relative to junior high schools and departmental schools.

<sup>1</sup> Douglass, A. A. *The Junior High School*. XVth Year Book of National Soc. for Study of Education. Part III, 1916:141.

TABLE 1.  
DATE OF ORGANIZATION

	DEPARTMENT JUNIOR SCHOOLS	ORGANIZATION DEPT. SCHOOLS	J. H. S. ORGANIZATION JUNIOR SCHOOLS
Before 1900.....	2	0	1
1900 to 1904.....	3	4	0
1905 to 1909.....	8	12	3
1910 to 1914.....	4	13	6
1915 to 1917 (April).....	18	2	25
Not stated.....	0	4	0
Total.....	35	35	35
*Median date.....	1915	1910	1915

\*Medians computed from exact dates indicated in reports.

TABLE 2.  
POPULATION OF CITIES AND TOWNS BY SCHOOL TYPE GROUPS

POPULATION*	JUNIOR GROUP	DEPT. GROUP	NON-DEPT. GROUP
0 to 999.....	12	2	8
1,000 to 2,499.....	2	6	9
2,500 to 4,999.....	3	7	5
5,000 to 9,999.....	6	10	1
10,000 to 19,999.....	3	7	0
20,000 to 49,999.....	8	3	0
50,000 to —.....	1	0	0
Total.....	35	35	23
†Median population.....	5,000	6,000	1,350

\* Estimated for 1916.

† Exact medians computed from estimated population of each city.

- b. Aims and advantages claimed for the reorganization movement, and standards of reorganization.

To evaluate any movement it is fundamentally important to know the aims its promoters seek to attain.

The method employed in this study of ascertaining aims, investigating practice, and determining standards of the reorganization movement in Indiana schools is as follows: first, a questionnaire was prepared on the basis of a summary of previous investigations and junior high school literature generally; second, a list of eighteen features, often associated with junior high school organization, was sent to twenty-five Indiana school men actively engaged in the reorganization movement to be ranked on the basis of relative importance in junior high school organization; and third, the features of practice in Indiana schools have been tabulated and analyzed in light of these tentative standards.

The following is the list of factors submitted for ranking; with the request that other important features not listed be added if any such applied to the situation, and that any that were of little or no value be crossed off. Directions were given to number the items in order of importance 1, 2, 3, etc.

#### ITEMS SUBMITTED.

- (a) Close contact of grammar school grades with the senior high school with respect to housing and the use of laboratories and equipment.

- (b) A distinctive organization separate from the elementary grades and the senior high school.

- (c) The use of the same teachers as in the senior high school, both in academic and special subjects.

- (d) Opportunities for some pupils to take some subjects of the high school earlier, as foreign languages or algebra.

- (e) Opportunity for pupils to take more extensive offerings in prevocational subjects than the minimum state requirements.

- (f) Provision for greater differentiation of curricula than under the old conditions.

- (g) Provision for rapid advancement of bright groups.

- (h) Promotion by subject.

- (i) Departmental teaching.

- (j) Reorganized courses of study.



- (k) Reorganized methods of instruction.
- (l) Provision for supervised study.
- (m) Provision for educational and vocational information and guidance.
- (n) Better organization of pupil social activities.
- (o) Opportunity for over-age pupils, regardless of their scholastic attainments.
- (p) Shortening the period of elementary and high school training by one year.
- (q) Opportunity to discover interests and capacities.
- (r) To provide specific training along lines of interest and ability.

This list was checked by twenty-five superintendents and principals, some ranking the entire eighteen items and others but five or six or ten as the case might be, which they considered most important. No item received twenty-five rankings.

TABLE 3.  
FEATURES OF JUNIOR HIGH SCHOOL ORGANIZATION.

ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	x	y	z
a	4	1	2	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	17	5.5	6.0
b	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	2	1	10	12.0	15.5
c	1	4	1	1	2	1	1	1	2	1	1	1	2	1	1	1	1	1	16	6.2	8.0
d	1	1	1	4	1	1	1	1	1	1	1	1	2	1	1	1	1	1	14	4.6	4.0
e	1	1	3	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	15	4.0	2.0
f	1	4	3	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	21	4.3	3.0
g	1	1	1	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	16	7.0	11.0
h	1	1	1	4	1	2	1	1	1	2	1	1	1	1	1	1	1	1	15	6.0	7.0
i	1	1	3	1	2	3	1	1	1	1	1	1	1	1	1	1	1	1	19	5.0	5.0
j	3	1	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	2.7	1.0
k	9	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	6.3	9.0
l	1	3	3	1	2	3	3	3	1	2	1	1	1	1	1	1	1	1	17	6.5	10.0
m	1	1	3	1	2	1	2	1	1	2	2	2	1	2	1	1	1	1	11	9.5	12.5
n	1	1	1	1	1	1	2	1	1	1	1	2	2	2	1	1	1	1	11	10.5	14.0
o	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	11	13.5	18.0
p	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1	1	1	11	12.0	15.5
q	2	1	1	1	1	1	1	1	1	2	1	1	1	2	2	2	1	1	13	9.5	12.5
r	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	9	12.5	17.0	

X, Y and Z indicate respectively, the number of judges, median rank, and relative rank.



Table 3 shows the resulting rankings. The letters at the left indicate the items in order as listed above, while the numbers across the top indicate the ranks in order of importance from 1 to 18. The three columns at the right are, in order, number of judges ranking each item, median rank, and relative rank determined from the medians. The table should be read as follows, beginning at the upper left hand corner and reading to the right: item (a) was ranked as first in importance by 4 judges, second by 1, third by 2, fourth, fifth, sixth, ninth, eleventh, twelfth, fourteenth, and sixteenth each by 1, and eighth by 2 judges. The total number of judges who ranked item (a) is 17, their median rank is 5.5 which gives this item sixth place in importance as compared with the ranks assigned the other items.

On the basis of the ranked judgments of the 25 judges, reorganized courses of study is entitled to the most important consideration of the 18 items listed in junior high school organization, opportunity for pupils to take more extensive prevocational offerings than the minimum state requirement is second, and then in order: provision for greater differentiation of curricula, opportunity to take high school subjects earlier; departmental teaching, close association of grammar grades with the high school with respect to housing and the use of laboratories and equipment, promotion by subject, the same teachers as for the high school, both in academic and special subjects, reorganized methods, supervised study, provision for rapid advancement of bright groups, provision for educational and vocational guidance and opportunity to discover interests and capacities (equal rank), better organization of pupil social activities, shortening of the twelve year course and a distinctive organization separate from the elementary or high school (equal rank), specific training along lines of interest and ability, and opportunity for over-age pupils regardless of their scholastic attainments.

An examination of the 18 items suggests that they fall into certain related groups which constitute more natural and usable standards than these isolated items. Items d, e, and j are concerned with modifications within subjects and courses of study, usually providing for enrichment; f, g, and h, with provision for individual differences; c, i, k, and l, with method modifications (c has been interpreted by the writer to have a marked bearing upon securing the spirit of secondary school methods in discipline

and instruction); m, n, and q, with exploration and discovery of interests and capacities. The remaining five items seem to represent more or less isolated factors, (a) economy in housing and equipment, (b) distinctive organization, (o) provision for over-age pupils, (p) economy of time, and (r) specialized training. To determine the relative values of these group standards, the rankings of the individual items are combined in groups as indicated above. Table 4 shows these combined rankings.

TABLE 4.

SHOWING GROUP RANKINGS OF FACTORS IN JUNIOR HIGH SCHOOL ORGANIZATION IN DESCENDING ORDER OF IMPORTANCE.

ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	x	y	z
A. SUBJECT MODIFICATIONS.																					
j	9	2	3	3	1	1	1	1	1	1									20	2.7	1.0
e	1	4	3	1	2	1							1	1					15	4.0	2.0
d	1	1	3	4	1						1	1	2						14	4.6	4.0
Total..	11	7	6	8	4	2	1	1	1	2	1	1	3	1					49	4.1	1.0
B. PROVISION FOR INDIVIDUAL DIFFERENCES.																					
f	1	5	4	3	4	1	2			1									21	4.3	3.0
h	1	1	3	1	2	2	1			1	2			1					15	6.0	6.0
g	1	1	1	4	1	1	1	2	1	1	1	1		1					16	7.0	10.0
Total...	3	7	7	8	7	4	4	2	2	4	1	1		2					52	5.2	2.0
C. REVISED METHODS.																					
i	3	1	4	2	1	3	1	1	1	1		1							19	5.0	5.0
c	1	4	1		2	1	1	1	2		1					1		1	16	6.2	7.0
k		3		1	2	3	3			1									13	6.3	8.0
l		1	3	2	2	1	1	3		2	1		1						17	6.5	9.0
Total...	4	9	8	5	7	8	6	5	3	4	2	1	1		1		1		65	6.0	3.0
D. PROVISION FOR EXPLORATION AND GUIDANCE.																					
m				1	1		2	1	1		2	2							11	9.5	11.5
q	2			1	1	1		1	1	2		1	1			2			13	9.5	11.5
n				1	1		2	1	1	1		2		2				1	11	10.5	13.0
Total...	2			3	3	1	4	2	3	3	2	5	1	2		2	1	1	35	9.8	4.0

In general, table 4 is to be read as is table 3. The horizontal totals line represents the sum of the group items immediately above it, except that the median rank (Y) and the relative rank (Z) are computed exactly as were these ranks for each separate item in the previous table.

Item (a) receives a ranking which gives it a value approximately that of group C (revised methods). This item was no doubt given undue weight by many superintendents because this combination is both natural and necessary in the small school, although several of the larger cities also utilize a common school plant for junior and senior high schools. However, it seems reasonable to assume that common housing is not an absolute requirement of reorganization although necessary or desirable in certain cases. The remaining four detached items are ranked at the bottom of the list and are apparently deemed of relatively little importance as factors in reorganization.

The relative ranks assigned to groups A, B, C, and D are the same whether we use the method adopted or average the original relative ranks.

As most of these group and individual factors will be discussed in a later section, extensive comparisons will not be made at this point. However, I shall offer a probable explanation for the apparently low ranking given provision for exploration and guidance, which receives very prominent mention in statements of aims in the literature on reorganization. Probably the most fundamental provision for this is thru the enrichment of the courses of study which has already been provided for in group A. It is also provided for in a measure thru differentiated curricula and revised methods; hence, as a separate factor, it is properly assigned a place below other factors thru which it is realized.

Recent educational literature emphasizes provision for the over-age child in the junior high school, but Indiana superintendents are apparently not in accord with this view in theory as we shall later see they are not in practice. Highly specialized training of the vocational type is not judged to be an important function of the junior high school. This is in agreement with Snedden<sup>2</sup> who says that it is right and proper that this period from 12 to 14 should continue to be reserved for general education (cultural, physical, and social education) and that no specific

<sup>2</sup> Snedden, D. "Character and Extent of Desired Flexibility as to Courses of Instruction and Training for Youths of 12 to 14 Years of Age". Ed. Adm. & Sup., 2:233.



vocational education should be offered in it. There is apparently little opinion in favor of shortening the period of school training except thru provision for accelerant groups. No doubt the opinion that the course should be enriched rather than shortened is the prevailing one.

On the basis of these rankings, then, we shall consider revised courses of study, provision for individual differences, modified methods, and provision for exploration and guidance as of highest value in the order given in the examination of procedure and practice in Indiana schools.

c. Standards of practice in Indiana reorganized grammar grades.

I have based my investigation of this phase of the study upon the work of the eighth grade as representing the one grade found in all types of junior high school grouping in Indiana schools, and as typifying the most characteristically transition grade between the elementary and the high school, and as representing the grade against which the chief charges have been made of useless repetition and formal, impractical, and uninteresting content.

The traditional subjects of the eighth grade, now yielding to more or less marked modifications, are reading, grammar, spelling, writing, arithmetic, history, geography, and physiology. The reading material too often consisted of numerous short selections, often over-difficult and ill adapted to the interests of youths twelve to fourteen years of age, and devoid of value for information or for literary enjoyment and appreciation. The grammar was usually of the technical sort with little or no application to written or oral composition. Spelling, to a large extent consisted of formal word lists, seldom used by adults and of unusual difficulty, and taught without regard to daily use in written work. Writing was a continued drill on form regardless of the need for improvement. In arithmetic much stress was placed on difficult, little used, and obsolete phases for the purpose of mental discipline. In both history and geography emphasis was generally placed on the memory-for-uninteresting-and detached facts type; while physiology was a memory exercise in anatomy with little regard to its functioning. As a rule each of these subjects was on the daily program of each pupil for a period of from fifteen to twenty-five minutes. The extent to which traditional subject matter and modes of treatment are still followed may be inferred in part by reference to the promotional examinations given by county superintendents to eighth grade pupils in March, April, and May of each year, and by reference to teachers' examinations in the common school subjects which may be found in the *Educator Journal* from month to month.

#### (1) PROGRAMS OF STUDY AND SUBJECTS OF STUDY MODIFICATIONS.

I shall indicate the program of studies for the eighth grade for each school, noting required and elective subjects in the general

curriculum, with the time devoted to each subject weekly, also what subjects the superintendent says have been considerably modified as to content recently. In English the time given to the various elements will be indicated where data are available as a basis for judging the relative emphasis. The presence of civics as a separate course or as a distinct phase of the history course will be noted together with the reference or text books used for such civics work. In mathematics any indications of a tendency towards general methematics, a partial year's work in algebra, or other modification of the traditional course will be noted. Whereever general science is offered in the ninth grade, but not in the eighth, the fact will be stated.

In the majority of these schools industrial and household arts and agriculture have been introduced since 1913, the date of the Indiana vocational education law, and not more than three or four schools have had such work in this grade to exceed ten years. General science is a new acquisition also, as is civics where it receives any marked consideration, at least if the emphasis is on the community civics type. Definite provision for physical training is also, generally, a new requirement. Music and drawing are comparatively new in several schools, while in others they have been represented on the program for twenty-five years or more.





TABLE 5—Continued.

SUBJECTS	SCHOOL												
	14	15	16	17	18	19	20	21	22	23	24	25	26
English (total).....	c8	c4	c5	c4	c4	c4	6	c5	12	5½	11	c5	c4
Literature.....	3	2	2	2	2	2	x	x	4	2	3	x	2
Grammar-composition.....	4	2	3	2	2	2	x	x	4	3	5	x	2
Spelling.....	1	*	*	*	*	*	x	..	2	½	2	..	*
Writing.....	..	..	..	..	..	..	..	..	2	..	1	..	..
Arithmetic.....	c2½	c4	2½	c4	c4	c4	5	c5	4	c5	5	c5	c4
Algebra.....	2½	..	2½	..	..	..	E5	5	..	c5	..	5	4
History-civics.....	c5	4	c5	4	4	4	5	5	4	c5	..	5	..
Civics.....	..	..	x	..	..	..	..	..	1	x	..	2½	..
Geography.....	..	..	..	..	..	..	..	x	x	..	..	2½	..
Physiology-hygiene.....	2½	..	..	..	..	..	4	x	4	1	2	c2	..
General science.....	z	4	5	4	4	4	E5z	..	z	2	z	..	4
Agriculture.....	..	2	2	2	2	2	1	..	3	2	2	2E5	2
Household arts.....	2	2	2	2	2	2	2	4	4	2	2	2E5	2
Manual arts.....	2	..	2	..	..	..	2	4	3	2	2	2E5	..
Drawing.....	1	1	2	1	1	1	1	x	2	1	2	2	1
Music.....	1½	1	2	1	1	1	1	x	2	1	2	2	1
Physical training.....	..	..	2	..	..	..	..	x	..	..	..	2	..
German.....	..	4	E5	4	4	4	E5	..	..	E5	..	E5	4
Latin.....	..	..	E5	..	..	..	E5	..	..	E5	..	E5	..
English (9th).....	..	..	..	..	..	..	..	..	..	..	..	..	..
Commercial.....	..	..	..	..	..	..	E5	..	..	E5	..	..	..
History (9th).....	..	..	..	..	..	..	E5	..	..	E5	..	..	..

TABLE 5—Continued.

SUBJECTS	SCHOOL									
	27	28	29	30	31	32	33	34	35	
English (total).....	c9½	c5	c4	c5	15	c4	8	c4	9	
Literature.....	x	2	2	3	5	2	2	2	2	
Grammar-composition.....	x	3	2	2	5	2	3	2	3	
Spelling.....	2½	..	*	..	2½	*	1½	*	2	
Writing.....	2	..	..	..	2½	..	1½	..	2	
Arithmetic.....	5	c2½	c4	c5	5	c4	5	c4	5	
Algebra.....	E5	2½	..	..	..	..	..	..	..	
History-civics.....	5	c5	4	c5	c5	4	5	4	5	
Civics.....	x	2½	..	x	1½	..	x	..	..	
Geography.....	..	2	..	2	5	..	3	..	3	
Physiology-hygiene.....	E5z	z	4	z	..	4	z	4	..	
General science.....	..	E2	2	..	1	2	2	2	x	
Agriculture.....	2	2	2	3	2	2	2	2	2	
Household arts.....	2	2	2	3	2	2	2	2	2	
Manual arts.....	2	2	1	2	x	1	1	1	x	
Drawing.....	2	2	1	1	x	1	1	1	x	
Music.....	2	2	2	2	..	..	3	4	..	
Physical training.....	E5	E5	4	2	..	4	E5	..	..	
German.....	..	..	..	..	..	..	..	..	..	
Latin.....	E5	E5	..	..	..	..	..	..	..	
English (9th).....	E5	..	..	..	..	..	..	..	E5	
Commercial.....	..	..	..	..	..	..	..	..	..	
History (9th).....	..	..	..	..	..	..	..	..	..	

\* Incidental in conjunction with composition and other subjects.

x Subject given but time not indicated.

E Elective.

+ Geography, history and civics given together.

z General science offered to ninth grade pupils.

GM General mathematics.

c Changes indicated from the traditional subject organization. School No. 10 has so modified its work that it offers approximately the usual ninth grade program in grade eight. School No. 13 has socialized practically every traditional subject.

Note. A period is taken to mean the time devoted daily to a standard subject, as arithmetic or history. Writing and spelling are commonly given much time is expressed in terms of the standard subject period.

Note. 2E5, etc., means 2 periods required and 5 periods elective.

Table 5 should be read, beginning with school number 1 and reading vertically down the column: in school No. 1 changes have been made in the English work which is given 5 periods a week; literature, 2 periods; grammar-composition, 3 periods; spelling incidental to various school subjects; writing not given at all; changes are indicated in arithmetic which is given daily for one-half year, with algebra daily for the second half year; changes are indicated in the history-civics work, but civics is not given as a separate course; geography and physiology-hygiene are each given daily for one-half year; general science is offered in grade nine; agriculture is not given; household and manual arts are each required 2 periods a week and are elective for 5 additional periods for some pupils; drawing, music, and physical training are each required for 1 period a week; and German, Latin, and commercial work are each elective 5 periods a week.

#### SUMMARY OF COURSE OF STUDY CONDITIONS.

##### *New Subjects*

Household arts, manual arts or agriculture are required in every school at least two periods a week, the minimum requirement of the State Board of Education.<sup>1</sup> In three schools as much as 7 periods a week may be taken along these lines by any pupil so electing to do. Agriculture is required in the eighth grade in 19 of the 35 schools. The average number of periods required a week in these practical arts subjects is 2.6, and 8 schools offer additional work as elective.

General science is required in 15 schools in the eighth grade, and may be taken with the ninth grade in three others. Other data in my possession show that in still 10 other schools this subject is offered in the ninth grade, but not to eighth grade pupils. Thus general science is offered, either required or elective, in the eighth or ninth grades of 28 of the 35 schools of this group.

In 30 of the 35 schools at least one subject usually taught in the high school is available to all or part of the pupils of the eighth grade, in 22 schools to the eighth grade pupils as class groups, and in the remaining schools to individual pupils with ninth grade classes. Algebra is required in 5 schools in grade 8A and is elective in 3 schools as a ninth grade subject, open to some

<sup>1</sup> Uniform Course of Study for the El. Schools of Ind. 1915-16:214.



pupils of the eighth grade. Latin is an elective for eighth grade pupils in 12 schools. German is required in the seventh and eighth grades of 12 schools and is elective for eighth grade pupils (and in a majority of these for the seventh also) in 15 other schools. Thus German is available in 27 schools to some or all eighth grade pupils.

The relatively large offering in German is, no doubt, to be accounted for by the fact that Indiana has a very large population of German descent, and this factor is especially prominent in Tippecanoe county where 12 of the junior high schools require German in grades seven and eight. So influential is this nationality factor in the state that legal provision is made for the compulsory introduction of German in the elementary grades on petition. The legal provision follows. ".....and whenever the parents or guardians of 25 or more children in attendance at any school of a township, town, or city shall so demand, it shall be the duty of the school trustee of said township, town, or city to procure efficient teachers and introduce the German language, as a branch of study, in such schools".<sup>2</sup> (The above stated provision is given under 'branches taught' in the elementary schools.)

Commercial work is elective in 6 schools for eighth grade pupils. In two of these schools it constitutes a part of the regular eighth grade vocational course, and in the other 4 schools ninth grade commercial work is elective to certain eighth grade pupils.

Free-hand drawing is required or elective one or more periods a week (generally 1 or 2) in each of the 35 schools.

Music is required in 34 of these schools and elective in one, the number of weekly periods being about evenly divided between one or two.

Physical training is required in 10 schools and is elective in one. Two periods a week is the more common time devoted to it where offered.

### *Old Subjects That Have Been Under-going More or Less Modification Recently.*

#### ENGLISH

Twenty-seven of these schools indicate changes in the courses in English, especially in the type of literary selections read (for the most part conforming to the state course of study), in a decided shift of emphasis from formal grammar to composition

<sup>2</sup> Ind. School Law, 1911, p. 108. Also, Ind. Rev. Stat. 1908, art. 6582.



and grammar with spelling often attached to the composition, and in a greater unifying of the English work. The time distribution for the English group of subjects indicates a marked reduction in the total number of periods devoted to English as compared with the old order. It is to be noted, however, that in most of these schools the length of the recitation and study periods combined have been lengthened over the old recitation period, but that the actual time given to the recitation proper remains about the same.

Twelve schools assign English 4 periods a week; 10, 5 periods (1 of these for one-half year only); 1, 6 periods; 3, 7 periods; 3, 8 periods; 3, 9 periods; 1, 11 periods; 1, 12 periods; and 1, 15 periods. The median time for the 35 schools is 5 periods a week and the average, 6.1 periods. Penmanship, which is properly no part of the English work, is included in this summary. If we omit this subject our distribution will be 12 schools, 4 periods a week; 9, 5 periods; 3, 6 periods; 5, 7 periods; 1, 8 periods; 2, 10 periods; 1, 12 periods; and 1 not indicated; a median of 5 periods and an average of 5.6 periods.

The time distribution for literature alone is: 21 schools, 2 periods a week; 3, 3 periods; 1, 4 periods; 1, 5 periods; and in 9 the total time only is indicated with no distribution among all the subordinate elements. The median for the 26 reporting the detailed distribution is 2 periods with an average of 2.3 periods.

In grammar-composition 13 schools assign 2 periods a week; 7, 3 periods; 3, 4 periods; 3, 5 periods; and 9 do not indicate the time distribution. The median for the 26 schools is 2.5 periods and the average 2.8 periods. This includes spelling in several schools where this is incidental in the composition work. The correct average should probably be about 2.5 periods to composition-grammar alone.

For spelling alone, 8 schools assign no periods; 1,  $\frac{1}{2}$  period; 2, 1 period; 2,  $1\frac{1}{2}$  periods; 4, 2 periods; 2,  $2\frac{1}{2}$  periods; 14, a small amount of time in connection with composition; and 2 with spelling time undistributed. Assuming from .2 to .3 periods for the 14 which offer spelling in combination, the median time would be .25 period and the average .67 for the 33 schools.

Writing shows 25 schools assigning no time; 3, 1 period; 1,  $1\frac{1}{2}$  periods; 4, 2 periods; 1,  $2\frac{1}{2}$  periods; and one without distribution of writing time. The median for the 34 schools is 0 periods and the average .5 periods a week.

## HISTORY-CIVICS

One school requires 7 periods a week in this group of subjects; 18, 5 periods; 15, 4 periods; and 1, 5 periods for a half year only. In one of the 5 period schools geography is included but additional emphasis is given to history and civics work in the auditorium periods. One school requires 3 periods a week in civics; 4, 5 periods for a half year; 1 offers industrial history as a ninth grade subject elective for many eighth grade pupils; 4 others indicate that civics is given the equivalent of 1 or  $1\frac{1}{2}$  periods; while 7 announce special attention to civics but do not indicate the time. If the state course of study is followed, some time is probably devoted to civics in every school, although the state course calls for a very formal type of constitutional dissection. The fact that Dunn's Community and the Citizen or Nida's The City, State, and Nation is used as a text in several schools indicates a tendency to break away from the traditional type of social science commonly given in the past. The median time given to the social science studies (not including geography) is 5 periods a week with an average of 4.6 periods.

## MATHEMATICS

In 19 schools mathematics is required 5 periods a week, and in the remaining 16, 4 periods a week. The median requirement is 5 periods and the average 4.6 periods. Four schools require algebra in grade 8A, while in 3 it is elective for many eighth grade pupils. A course in general mathematics (arithmetic, elementary algebra, and observational geometry) is reported by school number 10. In school number 20 certain pupils may elect commercial arithmetic, and in school 35, bookkeeping. Nineteen other schools indicate more emphasis on fundamentals or other changes in the traditional course, and 3 are planning to introduce general mathematics soon. One school offers vocational arithmetic in its vocational course. One of these schools in its printed syllabus for grade 8B announces ratio, proportion, partnership, powers, roots, mensuration, longitude and time, public lands, and the metric system as the topics for consideration, the very topics most often indicated for omission by the Committee on the Economy of Time<sup>3</sup> and other organizations attempting to bring about reorganization in grammar grade mathematics.

<sup>3</sup> Jessup, W. Economy of Time in Arithmetic. *El. S. Teacher*. 14:461.

## GEOGRAPHY

But 9 schools require geography in grade eight, although it is required by all in grade seven. Two schools require 5 periods a week for a half year; 1, 3 periods for a year, 1, 3 periods for a half year; and 5 do not indicate the time.

## PHYSIOLOGY-HYGIENE

Physiology-hygiene is required in 17 of the 35 schools in time varying from 1 to 5 periods weekly, the median for the 15 indicating time being  $2\frac{1}{2}$  periods, and the average 1.2 for the 33 schools reporting time or no time. Every school, except numbers 10, 12, and 27 requires some science work in the eighth grade, either physiology-hygiene, general science, or geography. In school 27 general science is elective for some eighth grade pupils.

## ELECTIVES

Sixteen schools indicate some regular arrangement for electives for certain groups of pupils, in all but four of these schools for bright pupils only. Where the grammar grades are housed with the high school, no doubt individual arrangement is also made by some of the other schools for bright pupils to carry an extra subject, but it is not announced as a regular provision.

Agriculture is elective in the eighth grade in 1 school; algebra in 3; commercial subjects in 6; drawing in 1; ninth grade English in 2; an additional special course in English in 1; general science in 3; German in 15 (in one school only for those who have studied it from the first grade); industrial history in 1; household arts in 6; Latin in 12; manual arts in 7; music in 1; and physical training in 1. As noted elsewhere in this study, 12 of the smallest of these schools have radically changed the eighth grade work by requiring general science and German each 4 periods weekly, but owing to the small size of classes it is not possible to make these courses elective. One of the larger schools, number 30, has made decided modifications in its program of work but offers no high school subjects nor electives to pupils below grade nine.

Schools 11, 12, 21, and 22 are in cities having 25,000 or more population and could easily provide well differentiated courses and elective studies. They all provide for accelerant and slow moving groups in a limited way. Slight modifications probably



have been made in the traditional subjects, but the time distribution for 22 indicates 12 periods weekly for English. Number 11 offers German for a limited number of bright pupils in grades seven and eight, but indicates no other marked plan of differentiation. School 12 offers German in grade eight to those who have had it for seven years, and also permits a few pupils to take physical training and music as elective work, otherwise offering no high school subjects and permitting no extra work. School 21 adjusts individual programs in exceptional cases, but has no definite system of differentiation or options. School 22 offers no options or electives, permits no extra subjects, and provides no differentiated courses. Schools 24 and 31, being in cities of less than 10,000 population, can probably not afford any extensive offering of differentiated courses, but it would seem possible for them to offer more of the practical arts and possibly one high school subject by cutting down on the excessive requirements in formal English. Several of these schools have apparently made no more changes in the traditional studies than the majority of Indiana schools not claiming junior high schools, and they have made no provision for individual differences thru electives or differentiated courses. They are apparently basing their junior high school claims almost exclusively on the fact that they have introduced departmental teaching. It should be added that at least two of these six are working on definite plans of reorganization at the present time.

To summarize, the typical Indiana junior high school requires in the eighth grade the following program: English 5 periods a week (approximately 2 to literature and 3 to grammar-composition combined); arithmetic 4 or 5 periods a week; history 4 or 5 periods a week (with definite work in civics in about one-half the schools and with an increasing tendency towards community civics); general science 4 or 5 periods a week or physiology-hygiene geography 2 or 3 periods; household or industrial arts or agriculture 2.6 periods a week; drawing and music each 1.3 periods; and physical training somewhat less than 2 periods a week (in one-third the schools only).

Elective subjects are: household or industrial arts and agriculture 2 to 5 periods a week (in 7 schools only), and foreign language 4 or 5 periods (most frequently German and required rather than elective in 12 of the 27 schools in which offered). Also it is to be noted that as a rule electives, outside the practical



arts, are open only to pupils above average in academic ability.

In the report of the Richmond, Indiana, Survey, director Leonard<sup>4</sup> refers to the plan of confining election in the practical arts work to pupils of inferior ability as a limitation of the present plan of organization in the junior high school in that city. Relative to elective subjects, he says: "Subjects offered as electives should be those which have appreciable identity with occupational activities or with lines of interest leading to well-defined courses to which they are fundamental."

Data submitted by 28 of these same schools for the seventh grade program of studies show the following average program. Required: English 6.2 periods a week, arithmetic 4.5, history 4.2, geography 2.7, physiology-hygiene 2, agriculture or manual training 2.1, domestic science 2.3, drawing and music 1.5 each, German (in 12 schools) 4, and physical training (5 schools only) 2. Elective: German or Latin in 4 schools, additional work in manual or domestic arts 4 schools, commercial work 1 school, and agriculture 1 school (twice a week).

Data submitted by 27 of the junior type schools show the following typical average program for the ninth grade. Required: English 5 periods a week, algebra 5, foreign language (Latin or German) 5. Elective: science 5 periods a week, manual or domestic arts 5 double periods, drawing and music (in most of the schools) 1 or 2 periods, physical training (in less than one-third the schools) 2 periods, commercial work (in one-third the schools and chiefly commercial arithmetic or book-keeping) 5 periods, industrial vocational courses in 5 or 6 schools only, and ancient history in about one-sixth of the schools.

Having ascertained the standards of practice among Indiana junior high schools relative to subjects of study modifications and differentiation of courses, the question arises, to what extent are these standards in agreement with junior high school practice generally, and with current educational opinion? What subject modifications and what degree of differentiation are desirable in reorganized schools?

Davis advises the following program of studies. "In the seventh and eighth grades each pupil's program should include: (1) English; (2) history, civics and geography; (3) ethics and sociology; (4) physiology and hygiene; (5) mathematics (including arithmetic, algebra and geometry); (6) elementary science; (7) manual training or household arts; (8) music and fine arts;

<sup>4</sup> Leonard, R. J. Report of the Richmond, Indiana, Survey for Vocational Education. (Ind. State Board of Ed. 1916) pp. 513, 548.

(9) drawing; (10) voice culture, public speaking, and dramatics; (11) physical training; and in addition opportunity should be given for one or two or three elective studies.”<sup>5</sup>

Francis<sup>6</sup> recommends the following for the general course in the seventh and eighth grades:

REQUIRED SUBJECTS		ELECTIVE SUBJECTS	
7th GRADE			
English.....	5 periods	Foreign language.....	5 periods
Arithmetic.....	5 periods	Bookkeeping or stenog-	
Geography-history.....	5 periods	raphy.....	5 periods
Physical training.....	1 period	(select one)	
Music.....	2 periods		
Drawing.....	2 periods		
Penmanship.....	2 periods		
Practical arts.....	4 periods		
8th GRADE			
English.....	5 periods	Foreign Language.....	5 periods
History-civics.....	5 periods	Bookkeeping.....	5 periods
Physical training.....	2 periods	Stenography.....	5 periods
Oral English-music.....	2 periods	Arithmetic-algebra.....	5 periods
Physiology-hygiene.....	2 periods	Drawing.....	5 periods
Practical arts.....	4 periods	(select two)	

The Butte Survey Committee<sup>7</sup> recommends the following subjects for the general course for grades seven and eight:

REQUIRED SUBJECTS		ELECTIVE SUBJECTS	
7th GRADE			
English.....	5 periods	Foreign language.....	5 periods
History.....	5 periods	Bookkeeping and business	
Geography.....	5 periods	arithmetic.....	5 periods
Arithmetic.....	5 periods	(select one)	
Physical training.....	2 periods		
Drawing.....	2 periods		
Music.....	2 periods		
Practical arts.....	4 periods		
8th GRADE			
English.....	5 periods	Foreign language.....	5 periods
History-civics.....	5 periods	Bookkeeping and business	
General science.....	3 periods	arithmetic.....	5 periods
Physiology-hygiene.....	2 periods	Mathematics (algebra and	
Drawing.....	2 periods	geometry).....	5 periods
Music.....	2 periods	(select two)	
Physical training.....	1 period		
Practical arts.....	4 periods		

<sup>5</sup> Davis, C. O. *Reorganization of Secondary Education* Ch. IV. in Johnston's High School Education p. 97. New York, 1912.

<sup>6</sup> Francis, J. H. *The Portland, Ore., Survey*, 1913. p. 196.

<sup>7</sup> The Butte, Mont., Survey, 1914. p. 65.

Leonard<sup>8</sup> recommends the following junior high school courses in the light of the findings of the Richmond, Indiana, Survey:

REQUIRED SUBJECTS

ELECTIVE SUBJECTS

FIRST YEAR, 7th GRADE

English.....	5 periods
History.....	3 periods
Geography.....	4 periods
Arithmetic.....	4 periods
Industrial arts.....	4 periods
Household arts.....	4 periods
Fine arts.....	2 periods
Music.....	2 periods
Physical education and hygiene.....	2 periods

Latin.....	4 periods
French.....	4 periods
Spanish.....	4 periods
German.....	4 periods
Commercial.....	4 periods
Industrial arts.....	4 periods
Household arts.....	4 periods
Agriculture.....	4 periods

SECOND YEAR, 8th GRADE

English.....	4 periods
History-civics.....	3 periods
Elementary science.....	4 periods
Industrial arts.....	4 periods
Household arts.....	4 periods
Music or fine arts.....	2 periods
Physical education.....	2 periods
Study of vocations.....	1 period

Latin.....	4 periods
French.....	4 periods
Spanish.....	4 periods
German.....	4 periods
Industrial arts.....	4 or 8 periods
Household arts.....	4 or 8 periods
Agriculture.....	4 or 8 periods
Commercial.....	4 or 8 periods
Drawing and design.....	4 or 8 periods
Music.....	2 or 4 periods
Mathematics.....	4 periods

THIRD YEAR, 9th GRADE

English.....	4 periods
History-civics.....	4 periods
Geography or science.....	4 periods
Physical education-hygiene.....	2 periods
Study of vocations.....	1 period

Latin.....	4 periods
French.....	4 periods
Spanish.....	4 periods
German.....	4 periods
Commercial.....	4 or 8 periods
Industrial arts.....	4 or 8 periods
Household arts.....	4 or 8 periods
Agriculture.....	4 or 8 periods
Drawing and design.....	4 or 8 periods
Music.....	2 or 4 periods
Mathematics.....	4 periods
Science.....	4 periods

(Six 50-minute periods are to constitute a day.)

<sup>8</sup> See reference 4, just cited. p. 550.



Snedden advocates a course of study having "a large range of elective or optional studies in addition to certain essentials in English language, English literature, American history, community civics, and geography."<sup>9</sup> Elsewhere,<sup>10</sup> he specifically mentions as desirable optional subjects modern languages and practical arts, including manual training, commercial subjects, agriculture, and household arts, but not compulsory for all. Snedden<sup>11</sup> also makes a clear distinction between doing or expressive subjects and those whose chief function is the development of appreciation, and believes that the latter type of material should be utilized more largely in the school program.

Bonser<sup>12</sup> recommends the following distribution of subjects and points for the junior high school consisting of the seventh, eighth, and ninth grades, 30 points constituting a year's work. Common subject matter for all, 54 points, are distributed thus; English 12, history 8, geography 8, elementary science 8, every day mathematics 8, civics and problems in industrial and vocational life 6, physical education 6, and music 3. He advises 36 points of optional matter to be chosen from any of the above named or to be distributed. His plan provides for a maximum of two-fifths optional work.

Briggs,<sup>13</sup> who is an advocate of the exploratory function of adolescent education, advises extensive reading of many classics in literature for appreciation, oral and written composition rather than formal grammar, music and pictorial art for appreciation, general history and community civics, general mathematics (including arithmetic, algebra, and constructive geometry), general science, and varied projects in the industrial arts, and possibly one general elective. "Exploration" he says, "should give some knowledge of many fields to be treated more exhaustively later."

A committee of the North Central Association of Colleges and Secondary Schools<sup>14</sup> recommends the following subjects or subject groups for the junior high school: (1) mathematics, (2) natural science, (3) social science, (4) language, (5) fine and practical arts; and also physical training and medical inspection

<sup>9</sup> Snedden, D. "Reorganization of Education for Children from 12 to 14 Years of Age. Ed. Adm. & Sup. 2:425.

<sup>10</sup> Snedden, D. *Problems of Secondary Education*. p. 231. New York, 1917.

<sup>11</sup> Snedden, D. "Character and Extent of Desirable Flexibility as to Courses of Instruction for Youths of 12 to 14 Years of Age." Ed. Adm. & Sup. 2:219.

<sup>12</sup> Bonser, F. G. "Democratizing Secondary Education by the 6-3-3 Plan". Ed. Adm. & Sup. 1:567-576.

<sup>13</sup> Briggs, T. H. "Possibilities of the Junior High School" *Education*. 37:279.

<sup>14</sup> Proceedings of the N. C. A. of Colleges & Secondary Schools, 1916.



without reference to graduation credit. The report further says that a stereotyped line of work for all is to be avoided, and advises continuity in three of the five lines, and an opportunity for a wide distribution of electives.

The Committee on the Economy of Time in Education<sup>15</sup> recommends the inclusion of the two last elementary grades with the high school, and the beginning of foreign languages, elementary algebra, constructive geometry, elementary science, and history two years earlier. It also recommends that subject matter be selected on the basis of relative values and that only the more important be included, and that methods be differentiated for formal and content material. The introduction of the prevocational arts is favored from the age of twelve.

Douglass reports the following as typical curricula for the junior high school: "7th grade; English 6 periods a week, with reading, writing, grammar, spelling and penmanship taught separately or in rather poor coördination under the general heading; social science (5), presented as history and geography; mathematics (5), meaning arithmetic; physiology and hygiene (3); or physical training (2); drawing (2); and, perhaps, music (2); manual training (2) or domestic science (2). 8th grade, English (5); history (5) or civics (5); arithmetic (5); physiology and hygiene (3) or physical training (2); music (2) or drawing (2); and an option between Latin or German (5) and manual training or domestic science (2). Real differentiation is under way in the ninth grade. Here the only required subject is English, and options are allowed, under supervision, to the extent that the pupil practically selects his own work. He may choose among Latin, German, history, algebra, general sciences, music and drawing, manual or industrial arts and domestic science, and certain commercial subjects."<sup>16</sup>

Educators are in rather general agreement as to the subjects that ought to have a place in the reorganized school, that modifications ought to be made in the old subjects looking to a more socialized content, and that certain high school subjects as foreign languages should be introduced, but there is far less agreement as to the specific content of each of these subjects and the methods by which they are to be taught, the time allotment of some of them, and the extent of options. In foreign language, for example,

<sup>15</sup> Report of Com. on Economy of Time in Education. U. S. Bur. Ed. Bul. 38, 1913.

<sup>16</sup> Douglass, A. A. The Junior High School. XVth Year Book of Nat. Soc. for the Study of Ed. part III. 1916. p. 82.

there are those who would transfer the grammar-translation method of the traditional ninth grade bodily to the seventh grade, while others, as Davis,<sup>17</sup> Briggs,<sup>18</sup> and the Committee on Foreign Languages<sup>19</sup> of the Commission on the Reorganization of Education suggest a beginning course "about" foreign language to give a knowledge of the people, customs, institutions, and geography of the country whose language is being studied, with a smaller amount of time given to the more formal elements of the language itself, for the purpose of giving immediate value and of stimulating interest to want more. The first two of the above named authorities with Breslich,<sup>20</sup> Taylor,<sup>21</sup> and others advise a modified program of mathematics for the eighth or ninth grades to include the mastery of the simpler parts of commercial arithmetic, with much practice on computing and checking, the elements of algebra, a well articulated body of geometric knowledge concrete, observational, and constructive, including not only rules for areas and volumes but also the simpler properties of geometric figures and graphic representations of space. The actual practice in Indiana schools does not indicate that these recommendations are receiving much consideration. Arithmetic in the eighth grade and algebra in the ninth are practically universal even in the schools claiming junior high school organization.

Foreign language is generally recommended as an option for grades seven and eight in theory and this seems to be followed to a considerable extent in practice, although in many schools the number permitted to take this work is very limited, and not a few schools still offer no language work below grade nine, preferring to provide a richer program in social and natural sciences and prevocational arts as being fundamentally more valuable as a training for citizenship.

The Ettinger plan,<sup>22</sup> or similar plan, for short unit exploratory courses in the industrial arts in the seventh and eighth grades is employed in the schools of Los Angeles, California, Kansas City, Kansas, Rochester, N. Y., and other cities, and is recommended by Briggs,<sup>23</sup> Leonard,<sup>24</sup> Snedden<sup>25</sup> and others. This plan provides

<sup>17</sup> Davis, C. O. *A Survey of the Secondary Schools of Grand Rapids, Mich.* pp. 231-242.

<sup>18</sup> Briggs, T. H. "Possibilities of the Junior High School." *Ed.* 37:279.

<sup>19</sup> Report of Com. on Reorganization of Education Bul. 41, 1913, U. S. Bur. Ed.

<sup>20</sup> Breslich, E. R. "Forward Movements in Secondary Mathematics." *Sch. Rev.* 24:283.

<sup>21</sup> Taylor, E. H. "Course in Mathematics in the Junior High School" *Ed. Adm. & Sup.* 2:460.

<sup>22</sup> Ettinger, W. L. *A Report on the Organization and Extension of Prevocational Training in Elementary Schools.* Dept. of Ed. N. Y. City, 1915.

<sup>23</sup> See reference 18.

<sup>24</sup> Leonard, R. J. *Report of the Richmond, Ind., Survey for Voc. Ed.* p. 553.

<sup>25</sup> Snedden, D. *Reorganization of Education for Children, etc.* *Ed. Adm. & Sup.* 2:425.

for participation in all typical lines of industrial work, as wood, metal, clay, electrical, concrete, printing, gardening, and other forms, each from four to nine weeks rather than spend an entire term or year in one field as is the usual practice. The idea is to discover interests and aptitudes as a basis for guidance.

As an illustration of the types of programs of studies that are used in Indiana reorganized schools, in junior high school grades, the following courses of study, representing six city and twelve village and rural high schools in one county, are submitted.

## TYPICAL COURSES OF STUDY

### 1. *Anderson, Indiana.*<sup>26</sup>

General course (vocational and commercial courses are also given in which the special work displaces geography-history).

#### REQUIRED SUBJECTS

#### ELECTIVE SUBJECTS

##### 7th GRADE

Literature.....2 periods  
Current events.....1 period  
Grammar.....1 period  
Spelling and composition..1 period  
Arithmetic.....5 periods  
History-civics.....5 periods  
Geography.....5 periods  
Household arts or wood  
work.....1 period  
Drawing.....2 periods  
Music.....1 period  
Physical training.....1 period

Latin.....5 periods  
German.....5 periods  
Cooking or sewing.....5 periods  
Printing.....5 periods  
Commercial.....5 periods  
(elect one)

##### 8th GRADE

English (as in 7th).....5 periods  
Arithmetic ( $\frac{1}{2}$  year).....5 periods  
Algebra ( $\frac{1}{2}$  year).....5 periods  
History-civics.....5 periods  
Geography ( $\frac{1}{2}$  year).....5 periods  
Physiology-hygiene ( $\frac{1}{2}$ )...5 periods  
Household or manual arts..2 periods  
Drawing.....1 period  
Music.....1 period  
Physical training.....1 period

Latin.....5 periods  
German.....5 periods  
Cooking or sewing.....5 periods  
Manual training.....5 periods  
Commercial training.....5 periods  
Printing.....5 periods  
(elect one)

<sup>26</sup> Course of Study for Junior High Schools, Anderson, Ind. 1917.



## 9th GRADE

English literature.....	4 periods	Latin.....	5 periods
Current events.....	1 period	German.....	5 periods
Algebra.....	5 periods	Cooking.....	2½ periods
		Sewing.....	2½ periods
		Household chemistry.....	5 periods
		Wood work.....	3 periods
		Mechanical drawing.....	2 periods
		Mechanical drawing.....	5 periods
		Botany.....	5 periods
		General science.....	5 periods
		Ancient history.....	5 periods
		Printing.....	5 periods
		Music.....	1 period
		Physical training.....	1 period
		Drawing (free hand).....	2 periods
		(elect three)	

2. *East Chicago, Indiana.*<sup>27</sup>

College preparatory course. (Non-college preparatory and commercial courses are also offered, which are the same as the college preparatory course in grade seven except in special cases, and which substitute practical arts for foreign languages in grades eight and nine.)

Grade 7, required subjects: arithmetic 5 periods a week, geography (one-half year) 5, grammar 5, U. S. history 5, physiology (one-half year) 5, music 1½, drawing 2, writing 1½, spelling (one-half year) 2½, and gymnasium 2½. No electives.

Grade 8, required subjects: preparatory mathematics 5, civics (one-half year) 5, English (one-half year) 5, Latin or German 5, manual training, printing, or domestic science 5, gymnasium 2½, Elective subjects: music 1½, drawing 1.

Grade 9, required subjects: English 5, algebra (one-half year) 5, geometry (one-half year) 5, Latin or German 5, general science or household science 5, Elective subjects: music 1½, drawing 1, gymnasium 2½.

All periods are 60 minute periods.

3. *Hartford City, Indiana.*<sup>28</sup>

Grade 7, required subjects: English 5, arithmetic 5, history 5, geography 5, manual training or domestic science 2, drawing 2, music 2, physical training 2. No electives.

<sup>27</sup> Report of Supt. of Public Instruction, Indiana. 1915-16:595.

<sup>28</sup> Program of Studies in the Hartford City Schools. 1916.



Grade 8, required subjects: general science 5, English 5, arithmetic ( $\frac{1}{2}$  year) 5, history ( $\frac{1}{2}$  year) 5, manual training or domestic science 2, drawing 2, music 2, physical training 2. Electives: Latin 5, German 5, algebra 5.

Grade 9, required subjects: English 5, algebra 5, Latin or German 5, physical training 2. Elective subjects: general science, general geography, manual training or domestic science 4, drawing 3, music 3.

#### 4. *Richmond, Indiana.*<sup>29</sup>

Grade 7, required subjects: English 5, arithmetic 5, history 5, music 2, drawing 2, woodwork or sewing 2, hygiene 2, physical training 2. Elective subjects (choose one): Latin 5, German 5, English composition 5, industrial work (boys and girls) 5.

Grade 8, required subjects: geography daily in 8B, civics in place of history, and cooking in place of sewing, otherwise the same as in grade 7, both required and elective.

Grade 9, required subjects: English 5, physical training 1. Elective subjects: algebra 5, Latin 5, German 5, botany 5, physiography 5, domestic art 5, domestic science 5, printing 5, bench work and mechanical drawing 5, free-hand drawing 2, chorus practice 1, orchestra  $2\frac{1}{2}$ , penmanship ( $\frac{1}{2}$  year) 5, commercial arithmetic ( $\frac{1}{2}$  year) 5.

#### 5. *Seymour, Indiana.*<sup>30</sup>

Grade 7, required subjects: English 5, arithmetic 5, geography ( $\frac{1}{2}$  year) 5, history 5, physiology-hygiene 2, sewing or woodwork 2, drawing 2, music 2. Elective subjects: Latin or German 5, agriculture 2.

Grade 8, required subjects: English 5, arithmetic ( $\frac{1}{2}$  year) 5, algebra ( $\frac{1}{2}$  year) 5, history ( $\frac{1}{2}$  year) 5, civics ( $\frac{1}{2}$  year) 5, physiology-hygiene 2, cooking or woodwork 2, drawing 2, music 2. Elective subjects: Latin or German 5, agriculture 2.

Grade 9, required subjects: English 5, algebra 5, Latin or German 5. Elective subjects: drawing 4, domestic science 4, manual arts 4, agriculture 5 (double), botany 7, general science 7, physical geography 5, ancient history 5, music 2.

<sup>29</sup> Program of Studies of the Richmond, Ind., High School. 1916.

<sup>30</sup> Courses of Study and Circular of Information of the Shields High School, Seymour, Ind. 1914.

### 6. *Tippecanoe County, Indiana.*<sup>31</sup>

Grade 7, required subjects: English 4, arithmetic 4, history 4, geography ( $\frac{1}{2}$  year) 4, physiology ( $\frac{1}{2}$  year) 4, agriculture 2, sewing 2, German 4, music 1, drawing 1. No electives.

Grade 8, required subjects: English 4, arithmetic 4, history 4, general science 4, agriculture 2, sewing 2, German 4, music 1, drawing 1. No electives.

Grade 9, required subjects: English 5, algebra 5, German 5, agriculture or wood work 5, cooking 5, music 1, drawing 1. No electives.

All periods are 40 minute periods.

### 7. *Vincennes, Indiana.*<sup>32</sup>

Grade 7, required subjects: English 5, arithmetic 5, social science (history, geography, nature study) 5, industrial arts, sewing, manual training) 5, music and physical training 5. No electives.

Grade 8, required subjects: English 5, arithmetic 5, history and civics 5, industrial arts (cooking, printing, manual training) 5, music and physical training 5. No electives.

Grade 9, required subjects: English 5, algebra 5. Elective subjects: Latin 5, German 5, general science 5, cooking or sewing 5, manual training 5, music and physical education 5.

<sup>31</sup> Report of the Public Schools of Tippecanoe Co. 1916-17.

<sup>32</sup> Course of Study, Senior and Junior High Schools, Vincennes, Ind. 1916-17.

## (2) PROVISION FOR INDIVIDUAL DIFFERENCES.

TABLE 6.

## PROVISION FOR INDIVIDUAL DIFFERENCE

SCHOOL	CURRICULA OFFERED†	FREQUENCY OF PROMOTION	METHOD OF PROMOTION	PROGRESS GROUPS†	PROVISION FOR INDIVIDUALS*
1	a, i, d, c	½ yr.	subject	a & s	ex, c, w, p
2	a	1 yr.	subject	no	none
3	a	½ yr.	subj. in part	a & s	ex, fr, ir
4	a	½ yr.	grade	no	ex, ir, o, fr, c
5	a	1 yr.	subject	no	ex
6	a	1 yr.	subject	no	fr, sp, ir
7	a	½ yr.	sub. in part	no	ex, ir, o, fr, p, c
8	a	1 yr.	subject	no	ex, c
9	a	½ yr.	subject	no	ex, ir, c, o
10	a, i, d, c	½ yr.	subject	a & s	ex, ir, w, fr, p, c
11	a	½ yr.	subject	a & s	ex
12	a	½ yr.	subject	a & s	ex
13	a, i, d	½ yr.	subject	a & s	ex, fr, p, v, o
14	a	½ yr.	sub. in part	no	ex, fr
15	a	1 yr.	subject	no	.....
16	a	½ yr.	subject	no	ex, c, ir, o
17	a	1 yr.	subject	no	ex, min
18	a	1 yr.	subject	no	.....
19	a	1 yr.	subject	no	ex, fr, c
20	a	½ yr.	subject	a & s	ex
21	a	½ yr.	subject	a & s	ex, fr, p
22	a	½ yr.	grade	a & s	.....
23	a	½ yr.	subject	no	ex, fr, o
24	a	½ yr.	subject	a & s	.....
25	a, i, d	½ yr.	subject	a & s	ex, ir, p
26	a	1 yr.	subject	no	ex, c
27	a	½ yr.	subject	a & s	ex, fr, c, o
28	a	½ yr.	subject	a & s	ex, fr, c, w, o
29	a	1 yr.	subject	no	.....
30	a	½ yr.	subject	a & s	.....
31	a	½ yr.	grade	no	.....
32	a	1 yr.	subject	no	o
33	a	½ yr.	subject	no	.....
34	a	1 yr.	subject	no	ex, c
35	a, c	1 yr.	subject	no	ex, fr, p

Under provision for individual differences are included those features of organization which attempt to secure adjustment to the varying capacities and subject interests of pupils, and to provide for individual or homogenous group advancement as contrasted with uniform progress by entire grades or classes. The features here considered are differentiation of curricula, method of promotion (by grade or by subject), frequency of promotion, homogenous progress groups, and means of individual advancement.

† a, i, d, c mean academic, industrial, domestic science, and commercial curricula.

† a & s means accelerant and slow moving groups.

\* ex, c, w, p, fr, o, ir, sp, v, min, respectively, mean extra subject, coaching, weighted credit, prevocational program, fewer subjects, credit for outside work, irregular promotion, special help, vacation work, minimum requirement.



Table 6 should be read: school No. 1 offers academic, industrial, domestic arts, and commercial curricula in the grammar grades; promotes pupils half yearly; promotes by subject; has provision for rapid and slow moving groups (as well as normal); and provides individual help thru extra subjects, coaching, weighted credits, and prevocational programs for special pupils.

### *Differentiation.*

Two schools, 1 and 10, indicate clearly differentiated curricula in their published outlines for the junior high school. School 13, Gary, which has a nation wide reputation for flexibility in fitting its program to individual needs, should be credited with adequate provision in this respect, and school 25 also has definite provision for each pupil in the seventh and eighth grades to choose approximately one-sixth his work from foreign languages, or practical arts, or a special course in English. Several other schools indicate three courses each, academic, household arts, and manual arts, but they appear to have but one standard course for all pupils, except that every girl takes 2 periods a week of domestic science and every boy 2 periods of manual training weekly, which condition is true of practically every school in the state. Schools 4, 16 and 23 begin commercial work, as do many of the others, in grade nine. All four of the schools having well differentiated curricula are in cities of 25,000 to 50,000 population. Five other cities are of the 20,000 and more population class and could provide well differentiated curricula, without doubt; five cities are between 8,000 and 12,000 population and could, no doubt, provide more definite differentiation than at present their programs show; while four other cities in the 5,000 to 8,000 class offer extensive electives in some high school subjects, it would seem desirable and quite possible for them to increase their offerings to seventh and eighth grade pupils in practical arts, especially as these grades are housed with the high school in each case and have the use of the high school shops and laboratories. With the remaining schools curriculum differentiation, save in household arts and manual training in limited degree, is clearly out of the question, but even here it would seem possible to plan a single curriculum with some design as some of them have done and are doing, and which according to Johnston<sup>33</sup> is the chief mark of the

<sup>33</sup>Johnston, C. H. *What is Curriculum Differentiation?* Ed. Adm. & Sup. 2:49.



junior high school. Thru provision for carrying an extra subject in many of these schools opportunity is afforded for a limited kind and amount of differentiation. Omitting the ninth grade, we may say that 31 of these 35 schools make no extensive provision for curriculum differentiation. Evidently these schools are not realizing in practice what their superintendents desire in theory, for they rated curriculum differentiation as third in importance of the 18 items submitted for ranking.

At the present time differentiation constitutes the storm center in junior high school discussion, and we find every possible variation both in theory and in practice. The recommendations relative to courses and subjects of study have a bearing on this point but the above mentioned writers and others have much to say more specifically to this point.

Johnston<sup>33</sup> has rendered a positive service in helping to clarify the meaning of the term differentiation. He points out that differentiated curricula should include many of the same courses in common, that differentiation may be thru courses for boys and for girls, for fast and slow moving groups, for prevocational and academic groups, and by having the same subject with different content adjusted to different group interests, and that every act of individual pupil help or variation in assignment is differentiation. More recently he writes: "curriculum differentiation is the crucial issue."<sup>34</sup>

Davis<sup>35</sup> advises the organization of differentiated curricula, some freedom of choice by pupils of subject matter to be studied, and differentiation of work among different classes in the same subject. Again, he says,<sup>36</sup> that this differentiation may come (and in small schools it must come) in the regular classroom work itself.

Briggs<sup>37</sup> says that differentiation may be on the basis of mental ability, interests, sex, etc., and should follow the decision of the pupil, parent, and teacher after exploration reveals facts about the child and the vocations.

Snedden<sup>38</sup> recommends differentiation on both psychological and social grounds, because of innate differences in human nature and capacities, and because of interests of a specific vocational kind. He urges uniform elements for the education

<sup>33</sup> Johnston, C. H. *The Junior High School*. Ed. Adm. & Sup. 2:413.

<sup>35</sup> Davis, C. O. *A Survey of the Secondary Schools of Grand Rapids, Michigan*. p. 230. 1916.

<sup>36</sup> Davis, C. O. in Johnston's *High School Education*. p. 97.

<sup>37</sup> Briggs, T. H. *Possibilities of the Junior High School*. Education, 37:279.

<sup>38</sup> Snedden, D. *Reorganization of Education of Children 12 to 14*. Ed. Adm. & Sup. 2:425.

of all where the purpose is training for civic life and assimilation into the broader social group. He advises partial group differentiation as early as the age of twelve, but he assumes that no highly specialized vocational training, as such, will be given in the junior high school.

Bagley,<sup>39</sup> while recommending the six-six plan as an administrative device for securing many desirable educational reforms, is opposed to the junior high school as an expression of marked differentiation. He argues that in a democracy in this age of extreme specialization there is urgent need for the development of a like-minded social consciousness, or as he puts it, a "social solidarity," and for this purpose the school (up to the age of fourteen) must place great emphasis on uniform and common elements tending to produce that end. Bagley protests against putting individual interests before the social, and fears that extreme differentiation will result in class stratification. He also argues that marked differentiation, unless common in all schools, both rural and urban in grades seven and eight, will seriously handicap pupils moving from one school to another. And he also states that the necessary differentiation to suit the needs of individual differences can be secured thru variation in method in classroom procedure.

Judd<sup>40</sup> points out the marked psychological changes of early adolescence and bases the need for differentiation on the demands of individual differences, and urges the abandoning of the eight-four plan with its elementary school methods for the upper two grades and the useless repetition of subject matter of the old organization.

Bonser<sup>41</sup> advocates partial differentiation on the grounds of the intrinsic nature of the child and his vocational destiny.

The committee of the North Central Association<sup>42</sup> advises that no first course in the junior high school should be modified as to purpose or content with reference to any group of high school pupils.

These authorities indicate that the trend of educational opinion has greatly changed since the time of the report of the Committee of Ten<sup>43</sup> in 1893, whose opinion was quoted in the introduction to the effect that every subject in the high school

<sup>39</sup> Bagley, W. C. *The Six-Six Plan*. School & Home Ed. 34:3-5 & 79, 80.

<sup>40</sup> Judd, C. H. *The Junior High School*. Sch. Rev. 24:249-260.

<sup>41</sup> Bonser, F. G. *Democratizing Education*, etc. Ed. Adm. & Sup. 1:567.

<sup>42</sup> Report of Com. on Definition of a Unit. Proc. N. C. A. 1916.

<sup>43</sup> Report of Com. of Ten of N. E. A. 1893. p. 17.

should be taught to every pupil in the same way and to the same extent regardless of his probable career. The extent of the change of opinion is realized when we consider that the Committee of Ten advocated no differentiation in the senior high school, much less in the junior high school.

Apparently all the writers are agreed that individual differences are rather marked at the junior high school age and demand some measure of recognition. They are also, no doubt, agreed that many elements of common training are desirable for a common citizenship, but they disagree as to the means and the amount of differentiation desirable.

The chief objection to extreme differentiation in subject matter seems to be founded upon a fear of industrial exploitation. Dewey,<sup>44</sup> as well as Bagley, views this possibility with concern.

However much extreme subject differentiation may be objectionable in theory, neither Douglass' investigation nor my own indicate a degree of differentiation of the sort that has assumed alarming proportions. An option of a foreign language 4 or 5 times a week or of prevocational arts (in Indiana required) 2 or 3 times a week in the eighth grade seems to be the more general practice among so-called junior high schools. It is to be noted, however, that the majority of schools in this study are of the small school type. Apparently other means of differentiation, as fast and slow moving groups, permission to carry extra or fewer subjects, variation in classroom methods to suit individual needs, sex segregation in prevocational arts, and certain modifications in subject matter for all are relied upon as the chief provisions for individual differences. Neither a wide range in options nor varying rates of progress by groups are available for the small school.

But 4 of the 35 Indiana schools have any marked variations in curricula, and in no one of these has the pupil an option of more than one-fifth his work during the seventh and eighth grades.

Bonser<sup>45</sup> recommends about two-fifths the time in the eighth grade for optional or differentiated work; Snedden,<sup>46</sup> that at least one-fifth the program be differentiated or optional; and Bagley<sup>47</sup> argues against the elective principle below grade nine. About

<sup>44</sup> Dewey, J. "A Policy of Industrial Education. *School & Soc.* 2:11.

<sup>45</sup> Bonser, F. G. *Democratizing Education*, etc. Ed. Adm. & Sup. 1:567.

<sup>46</sup> Snedden, D. *Character & Extent of Desired Flexibility*, etc. Ed. Adm. & Sup. 2:233.

<sup>47</sup> Bagley, W. C. *The Six-Six Plan*. S. & H. Ed. 34:3-5 and *Justification of a Certain Measure of Uniformity*. Ill. Univ. School of Ed. bulletin 13, 1914:12-21.



one-half the Indiana junior type schools offer no electives, although in 13 of these the former program of studies has been radically changed in grades seven and eight with limited options in the ninth.

The writer desires to advance objections to current arguments for extreme differentiation on the grounds, first, that our psychology of individual differences indicates that original nature is selective and that differing natures will react to common stimuli differently and produce differing individualities;<sup>48</sup> and, second, the principal already advanced by Briggs that interests and aptitudes do not precede experience, should furnish a basic principle for required exploratory courses. While we must give due weight to environmental influences, it would seem that the principle first stated should receive consideration. Another point much stressed in the educational literature on the junior high school is the variation of subject matter in a given course to fit the demands of different curricula settings. Just why should a boy taking the general curriculum in the seventh or eighth grades have a different brand of civics from that of a boy taking a commercial or industrial course? I wonder if we have not dragged a Munich continuation school idea, properly applicable to youthful workers sixteen or eighteen years of age, who have both vocational experience and vocational interests, into our grammar grades and attempted to apply it to twelve year-olds who have neither vocational experience nor vocational interests of any very definite sort. The recommendation of the North Central Association Committee, already referred to, that no first course in the junior high school should be varied in content for different curricula groups, seems to be based upon sound pedagogic principles.

In conclusion, all writers are agreed that subject matter modifications and some degree of differentiation are indispensable features of the junior high school. In practice, junior high school claims are all too often based upon mere administrative changes in externals, as the grouping of certain grades or the utilization of certain housing facilities. Relative to this Snedden says: "Proposals for the junior high school type of school organization are chiefly, as yet, proposals for administrative readjustments. I hear very little regarding pedagogical changes."<sup>49</sup> Judd, in a

<sup>48</sup> Thorndike, E. L. *Educational Psychology*. Vol. III. pp. 305-310.

<sup>49</sup> Snedden, D. *Reorganization of Education*, etc. Ed. Adm. & Sup. 2:425.



recent summary of current educational writings, expresses a similar opinion. He says: "Nor can one avoid a feeling of apprehension that the movement in the direction of changes in administrative form will outrun the changes in organization of materials and methods of instruction which are essential to the ultimate success of the junior high school."<sup>50</sup>

### *Promotions.*

Of the 35 schools, 22 have promotion half-yearly and 13 yearly. Here the determining factor is clearly that of the size of the school. All the schools having yearly promotions are in towns of 1,600 population or less. It is clear that two sets of standards must apply here, one for the larger and another for smaller schools. Frequency of promotion is desirable so that failed pupils may not lose overmuch time in repeating, but the small school with its smaller classes and its possibility for more intimate contact between teacher and pupil and for individual help should be able to prevent failures in greater degree and thus overcome this objection in part.

Various investigations indicate that promotion by subject is a well nigh universal practice with junior high schools. Without it there can be but little flexibility in providing for individual advancement. Promotion by subject or by related groups of subjects seems to be a standard feature of practice with Indiana junior high schools as well as of theory. Thirty-two schools indicate promotion by subject in whole or in part. Of the three reporting promotion by grades, one is just inaugurating its reformed organization and states that subject promotion is to be introduced soon. The remaining two schools, 22 and 31, having promotion by grades are among the cities of the 8,000 and larger population class and have claimed junior high school organization for several years. Their practice with respect to this standard is clearly not in line with either the best opinion or practice.

### *Accelerant and Slow-Moving Groups.*

Fourteen schools report fast and slow moving classes as definite features of their organization, while 21 schools say they do not have such organization. School 4 says this will be added next year. Of the remaining 20 schools, not having such groups,

<sup>50</sup> Judd, C. H. In *School Rev.* May, 1917. p. 375.

17 are in towns of 4,000 or less population where such provision is clearly impracticable on account of the limited number of class groups in any one school grade. School 16 has probably too small a population to warrant the introduction of this feature, but other schools of the size of 7 and 31 (8,000 to 12,000) are using it successfully which would appear to warrant its being tried out in these two schools.

### *Plans for Individual Advancement.*

Eight schools made no report to this part of the questionnaire. But one school, number 2, states that it has no provision for pupil advancement other than moving with the class group. Twenty-four schools indicate that extra subjects are available for pupils of good ability in academic work; 13 indicate that some pupils may take fewer subjects; 13, coaching or special help; 7, more prevocational work in place of some of the academic work; 9, credit for outside work; 8, irregular promotion; 3, weighted credits; 1, vacation work as an opportunity to make up work; and 1, minimum requirement in each subject for certain pupils. My replies indicate that more adequate provision is made for the brighter pupils, but if the opposite case had been submitted as clearly, we should, no doubt, find that coaching and special help for slow pupils are even more common than provision for the advancement of bright pupils. In evaluating the standards of the school these factors should be considered in connection with accelerant and slow-moving groups, supervised study, and the size of the school. Where the school is too small to provide fast and slow progress groups, it is evident that some definite provision should be made for supervised study or other means above enumerated for advancing each pupil with the greatest benefit to himself.

To summarize, clearly differentiated curricula is not a standard feature of practice even among the larger Indiana junior high schools. In cities of 2,000 or more population half-yearly promotion is the universal practice as is yearly promotion in the smaller communities. Promotion by subject in whole or part is practiced in nearly every junior high school, 32 of the 35, and may be accepted as a standard. As every school in cities of 10,000 or more population, except one, has or is to have soon, accelerant, slow, and normal progress classes, we may accept such practice as standard for cities of this class, and as

but two cities smaller than this have such groups, we may assume that this is not a reasonable standard for junior schools in these smaller towns. The facts of table 6, last column, would seem to warrant the expectation that every school should provide one or more means, each, for helping unusually bright or slow pupils to make the best possible adjustments in school progress as means of adjustment to individual differences.

These conclusions refer only to present standards of practice in these 35 Indiana schools claiming junior high school organization, and may not be adequate standards for junior high schools generally, as indicated by their form of organization and administration. Comparative data are limited.

Briggs'<sup>51</sup> data show 31 schools promoting by subject to 19 not so promoting, and 32 schools promoting half-yearly to 13 yearly. Data relative to other features named in table 6 are not available for comparison.

### (3) REVISED METHODS.

The two most prominent factors in the reorganization movement are the demand for changes (1) that shall bring the pupil into better adjustment with the social demands (economic, political and industrial) of his time, and (2) that shall give due consideration to individual differences in interests and capacities.

To realize these new aims, more or less extensive changes are proposed in the program of studies thru the revision of the content of old subjects and the introduction of new ones. But valuable as these revisions are, the desired aims will not be realized unless the methods, by which the new content is to be made a part of the pupil's experience, are revised and adapted to the new aims. The new socialized content cannot be made effective thru the old drill methods. Method must conform to subject matter. Relative to this Dewey says: "Method means that arrangement of subject matter which makes it most effective in use. Never is method something outside the material." Again: "The better methods of teaching engage his activities."—"The method is derived from observation of what actually happens with a view to seeing that it happens better next time."<sup>52</sup> Again, as touching the topic of interest, he says: "The problem of instruction is thus that of finding material which will engage

<sup>51</sup> Briggs, T. H. "The Junior High School." Report of U. S. Com. of Ed. 1914. Vol. I. pp. 135-157.

<sup>52</sup> Dewey, J. *Democracy and Education*. p. 194. New York, 1916.



a person in specific activities having an aim or purpose, of moment or interest to him."<sup>53</sup> Elsewhere<sup>54</sup> Dewey advocates a type of method, the psychological, based on the experiences, interests, and abilities of the learner in contrast with the more usual and formal methods based upon the logic of the subject matter as viewed by the one who has mastered it. And again<sup>55</sup> he speaks of the abuse of linguistic methods in education

Eliot advocates similar revisions in content and methods to replace the old formal program. He says: "We Americans, like the Chinese, have dwelt in our schools too much on two faculties—discrimination between shades of meaning of different words and phrases, and memory for words, phrases, narrative, description, and even argument. Memory training has predominated over training in observation and the acquisition of skills."<sup>56</sup> He advocates more acquisition of skill by pupils, more sense training, more contact with real objects, practice in the use of machines, a larger place for laboratory work, wider opportunities for sport, and an extension of the playground movement. Continuing, he says: "We must not imagine that this better preparation of children to earn their livelihood is going to diminish the intellectual value of the school training."

Other writers have criticised traditional methods of instruction in the grammar grades. Davis says: "Individual tastes and capacities are not rightly considered,—discipline is unsuited to the stage of development of the pupils,—methods of instruction are unpedagogical,—there is not sufficient hand work—the whole system is over-mechanized."<sup>57</sup> Speaking of the psychology of the adolescent period, he says: "Individuality begins to play and demands a larger circle in which to assert and express itself.—To keep him (the adolescent) under the restrictive and arbitrary discipline of the ordinary elementary school is to sin against nature and to commit an offense against the laws of social well-being. To employ with him the methods of instruction and training of the elementary school is to provoke him to truancy, encourage him to evade school work, and impel him to forsake school duties altogether." He advocates discovery and development of individual aptitudes, the sub-

<sup>53</sup> Dewey, J. *ibid.* p. 155.

<sup>54</sup> Dewey, J. *How We Think*. ch. v. New York, 1910.

<sup>55</sup> *ibid.* p. 176.

<sup>56</sup> Eliot, C. W. *The Concrete and Practical in Modern Education*. pp. 14-39. Boston, 1913.

<sup>57</sup> Davis, C. O. *Principles and Plans for Reorganizing Secondary Education*, in Johnston's *High School Education*. ch. iv. New York, 1912.



stitution of useful content for formal methods, departmental instruction, a more vitalized classroom procedure, and self-activity.

Hall,<sup>58</sup> than whom no one has written more extensively on the psychology and pedagogy of adolescence, offers many suggestions relative to methods of discipline and instruction during adolescent years. Pertaining to discipline, he says: "The period of habituating morality and making it habitual is ceasing; and the passion to realize freedom, to act on personal experience, and to keep a private conscience is in order.—The attempt to treat a child at adolescence as you would treat an inferior is instantly fatal to good discipline—guidance by command may now safely give way to that by ideals—the one unpardonable thing for the adolescent is dullness, stupidity, lack of life, interest, and enthusiasm in school or teachers, perhaps above all, too great stringency. Least of all, at this stage, can the curriculum or school be an ossuary." He urges emphasis upon interest rather than drill; upon appreciation instead of expression; upon great wholes rather than upon over-accuracy and 'morselization'; upon more oral and objective work. He denounces the excessive amount of writing demanded of pupils, and characterizes the daily theme as an 'infection'. Speaking of the pubescent reading passion, he says: "It is the age of skipping and sampling, of pressing the keys lightly."

Snedden<sup>59</sup> advocates a change from the traditional methods of drill and memory and formal analysis, by which external bits of information are acquired, to natural methods, based on the nature of the learning process. He would have methods grow out of educational experimentation in all the varied school activities. He advocates that methods be in keeping with the new and variable types of subject matter to be introduced into the junior high school, methods capable of adaptation to individual differences, methods that shall reveal to the pupil his capacities and develop power in expression, departmental teaching or the Gary plan of allied groups, short unit courses in the practical arts with the project method. He states that the work of these years (12 to 15) has too much of repetition and memory drills, and lacks vitality.

<sup>58</sup> Hall, G. S. *Youth, Its Education, Regimen, and Hygiene*, ch. 9, 10. New York, 1907.

<sup>59</sup> Snedden, D. *Problems of Educational Readjustment*. ch. 2, 5, 6. Boston, 1913.

Definite suggestions relative to reorganized content and methods in English,<sup>60</sup> community civics,<sup>61</sup> and the social sciences<sup>62</sup> have been recently published by the Commission on the Reorganization of Secondary Education in a series of bulletins issued by the United States Bureau of Education. Social motive and pupil activity receive marked emphasis.

The project method has been strongly advocated for practical arts, and more recently for elementary science in the junior high school, and its principles are being utilized in increasing degree even in such subjects as history and literature.

Concerning this method the Committee on General Science of the National Education Association says: "The most effective method of science teaching yet devised, in which all three elements of the scientific spirit receive due recognition, is called the method of teaching by projects.—Every project is characterized by three equally important elements of the scientific spirit; namely, (1) a desire on the part of the pupil to understand better the meaning and use of some fact, phenomenon, or experience. This leads the pupil to ask questions. (2) A firm faith that it is worth while and possible to secure a better understanding of the thing in question. This causes the pupil to go to work with enthusiasm. (3) The gathering from experience, books, and experiments of the needed information, and the application of this information to answer the question in hand. This settles the question temporarily at least."<sup>63</sup>

Relative to this method Twiss says: "The method of starting a project or problem and giving the pupils time to think and study on it, and to work it out for themselves with the assistance of the teacher and their classmates, puts them in a position where they have a strong immediate motive for getting all the information they can that bears on the solution of the problem or the accomplishment of the project."<sup>64</sup>

These points of view of method in instruction indicate the need of marked changes from the traditional procedure and imply conditions that ideally should obtain in laboratory, shop, excursion, individual and home projects, sports and athletics and supervised study procedure, which types of method are commonly being advocated for the junior high school. This is

<sup>60</sup> Reorganization of English in Secondary Schools. U. S. Bur. of Ed. Bul. 2, 1917.

<sup>61</sup> Teaching of Community Civics. U. S. Bur. of Ed. Bul. 23, 1915.

<sup>62</sup> Social Studies in Secondary Education, U. S. Bur. of Ed. Bul. 28, 1916.

<sup>63</sup> Preliminary Report of Com. on General Science of N. E. A. 1916.

<sup>64</sup> Twiss, G. R. Science Teaching. ch. 23. New York, 1917.

quite in opposition to the disciplinary conception, the result of which Dewey characterizes by a quotation: "It makes no difference what you teach a boy so long as he doesn't like it"; or to the view as formulated by the Committee of Ten,<sup>65</sup> that subjects of study are of equal educational value if they are thoroughly taught, which statement seems to imply that method is the prime factor and separate from subject matter.

Modification of methods was ranked as third in importance of the seven group factors in reorganization by Indiana superintendents.

The determination of methods of instruction and discipline in the junior high school, as contrasted with other school units, constitutes an important problem in the reorganization movement.

A limited number of inquiries, sent to certain schools relative to the organization of important subjects in the program and details of teaching method, failed to secure responses that would have value in an analytical treatment, and as the writer was unable, personally to visit any large number of the schools investigated during the period of investigation, direct observation and record of methods were impossible. In the absence, then, of these direct evidences of revised methods, certain indirect evidences have been selected which, in a measure, are indicative of the nature of methods of organization, teaching, and study procedure.

One of the chief arguments for grammar grade reorganization, advanced by some has been to introduce high school methods earlier into our schools. Departmentalized instruction has been defended largely on the ground that it meets this need. The degree, then, to which departmental instruction has been employed should be indicative of the break with the traditional elementary school procedure of one teacher for a class for all subjects.

If high school methods of organization, instruction, and discipline, or methods more nearly approximating the high school type are desired, as many writers on the six-six plan advocate, then we may expect that the employment of teachers with high school teaching experience, especially if they are also teaching some high school classes at the same time, will favor the introduction of high school methods in these grammar grades.

<sup>65</sup> Report of the Com. of Ten on Sec. Ed. 1893. p. 53.



Supervised study is an important means for securing more attention to the needs of the individual pupil as contrasted with mass instruction and should lead to improved teaching methods. That it has not accomplished all that is hoped or claimed for it goes without saying, but its introduction is indicative of desire to improve thru experimentation.

The use of the individual project plan in prevocational subjects has been singled out as a fourth index of revised methodology. This plan, while often advocated for all natural and social sciences has not generally been employed in the older subjects of the course of study, and hence I have confined my inquiry to its use in the practical arts subjects, where it is coming into most extensive use. The employment of this method in this line of work is strongly advocated by the Indiana State Department of Public Instruction<sup>66</sup> and by the Massachusetts State Board of Education.<sup>67</sup>

Table 7 sets forth certain factors that are more or less indicative of method modifications. The table should be read: in school 1, 66.7% of junior high school teachers teach one subject only; 16.7%, 2 subjects; 16.6%, 3 or more subjects; no report was made as to the number of teachers per pupil in grades seven and eight; 30 minutes of each class period (60 minutes in this school) are devoted to supervised study in each study subject; the project method is used in prevocational work; a part of the junior high school vocational work is taught by senior high school teachers; and 75% of all junior high school teachers have had high school teaching experience.

<sup>66</sup> Uniform Course of Study for the Elem. Schools of Ind. 1915-16. pp. 228,238.

<sup>67</sup> "Agricultural Project Study," "Project Study Outlines for Vegetable Growing." (Bul-  
letins of the Mass. State Board of Ed.)



TABLE 7.

## FACTORS IN METHOD MODIFICATION

SCHOOL	DEGREE OF DEPARTMENTALIZATION*			NO. TEACHERS PER PUPIL		TIME TO SUPERVISED STUDY	PROJECT METHOD	J. H. S. WORK BY H. S. TEACHERS	% J. H. S. TEACHERS WITH EXPERIENCE
	1	2	3	7	8				
1	SUBJECT	SUBJECTS	SUBJECTS	.....	.....	30	yes	part V.	75
2	66.7	16.6	16.6	.....	.....	15	yes	all	100
3	20.0	20.0	60.0	.....	.....	15	part	Ger. Lat. V.	20
4	82.0	18.0	0.0	5	5	30	yes	part Ac. & V.	89
5	.....	.....	.....	.....	.....	15	yes	all	100
6	.....	.....	.....	.....	.....	15	.....	all	100
7	78.0	22.0	0.0	7	7	15	part	Ger. Lat. V.	29
8	.....	.....	.....	.....	.....	15	no	all	100
9	12.5	50.0	37.5	6	5	15	yes	all	100
10	89.0	11.0	0.0	8	6	30	.....	all	100
11	.....	.....	.....	6	6	15	yes	Ger. V.	13
12	.....	.....	.....	6	4	15	no	Ger. V.	.....
13	.....	.....	.....	6	6	30	yes	all	100
14	0.0	100.0	0.0	.....	.....	30	yes	all	100
15	0.0	0.0	100.0	.....	.....	15	yes	all	100
16	77.0	15.0	8.0	7	7	30	no	Ger. Lat. G. V.	69
17	.....	.....	.....	.....	.....	15	no	all	100
18	.....	.....	.....	.....	.....	15	.....	all	100
19	0.0	40.0	60.0	.....	.....	15	yes	all	100
20	.....	.....	.....	5	5	0	.....	H. S. & V.	25
21	78.0	20.0	2.0	6	7	15	yes	all (8th)	9
22	.....	.....	.....	6	3	yes	yes	none	86
23	0.0	40.0	60.0	3	5	0	yes	part Ac. & V.	44
24	.....	.....	.....	6	5	0	no	V.	26
25	70.0	30.0	0.0	.....	.....	25	yes	none	100
26	0.0	20.0	80.0	.....	.....	15	.....	all	62
27	75.0	25.0	0.0	.....	.....	30	no	part Ac. & V.	92
28	45.5	45.5	9.0	5	5	30	no	part Ac. & V.	100
29	0.0	25.0	75.0	.....	.....	15	no	all	.....
30	.....	.....	.....	.....	.....	30	yes	Part Ac. & V.	.....
31	.....	.....	.....	6	6	yes	yes	V.	42
32	0.0	100.0	0.0	.....	.....	15	yes	all	100
33	64.0	30.0	6.0	5	5	25	no	part Ac. & V.	50
34	.....	.....	.....	.....	.....	15	yes	all	100
35	24.0	16.0	60.0	2	4	0	yes	part Ac. & V.	71

\* Data in this column taken in part from Briggs' 1917 study on the Junior High School (unpublished).

Note: Ac, V., Ger., Lat., H. S., G., J. H. S. mean respectively, academic subjects, vocational subjects, German, Latin, high school subjects, general science, junior high school.

Direct replies from superintendents and an inspection of schedules of school work provide the data as to the degree of departmentalization in 22 of these schools. Thru visitation and conferences with teachers the writer is familiar with the practice in schools 3, 11, 12, 13, 20, 22, 24, 30 and 31, in each of which the distribution is not far from 75% teaching 1 subject; 20%, 2 subjects; and 5%, 3 subjects or more. The 4 remaining schools, 8, 17, 18, 34, are of the same approximate size, number of teachers, and plan of organization as schools 2, 5, 15, 19, 29 and 32. They are all under the direction of the same county superintendent and aim to carry out departmentalization as far as a staff of 4 or 5 teachers will permit in grades 7 to 12. Approximately 50% of these teachers will be found to teach 2 subjects and 50% 3 or more subjects.

In approximately 18 of the 35 schools 60% or more of the teachers teach but 1 subject or field of work; in 1, 45.5%; and in 3, between 12.5% and 24%. It is probable that in 7 schools 50% of the teachers teach 2 or more different subjects or lines of work; and that in 9 schools 50% or more of the teachers teach 3 or more subjects. In all cities of 5,000 or more population, save one, 60% or more of the teachers teach 1 subject only, while in the smaller schools the numbers are about equally divided between the teachers having 2 and those having 3 or more subjects.

The questionnaire form calls for data relative to the number of different teachers a normal pupil has in any one term in grades 6, 7, 8, and 9. The tabulated replies show the following results: grade 6—6 schools 1 teacher; 2, 2 teachers; 2, 3 teachers; 2, 4 teachers; 2, 5 teachers; 3, 6 teachers; 1, 9 teachers; and a median of 3 teachers. Grade 7—1 school 2 teacher; 1, 3 teachers; 4 5 teachers; 8, 6 teachers; 2, 7 teachers; 1, 8 teachers; 1, 9 teachers, and a median of 6 teachers. Grade 8—1 school 3 teachers; 2, 4 teachers; 7, 5 teachers; 4, 6 teachers; 3, 7 teachers; 1, 9 teachers; and a median of 5 teachers. Grade 9—7 schools 4 teachers; 6, 5 teachers; 2, 6 teachers; 1, 7 teachers; and a median of 5 teachers. Reports from the 11 rural high schools not reporting would probably lower the median result for grade seven by one teacher. These 11 schools have the same teachers for grades 7 to 12 and the same degree of departmental teaching in all these grades, namely, 4 or 5 teachers per pupil. The above results indicate that the degree of departmentalization in grades seven and eight is as complete as in grade nine, and that in the seventh grade the pupil has to adjust himself to more teachers than in higher grades.

Briggs is of the opinion that complete departmentalization is not so desirable as partial for the seventh and eighth grades. "One principle to be observed," he says, "provides that the increase in the number of teachers for each child shall be gradual."<sup>68</sup>

A committee of the High School Masters' Club of Massachusetts says: "it (departmental teaching) makes for thoroughness and accuracy of scholarship and better methods of teaching.—There are some dangers in early departmental instruction, but these do not seem to be insuperable, and they are far outweighed by the advantages, especially when such instruction is introduced gradually. The practice of some junior high schools of having two teachers in the seventh grade and three in the eighth and full departmental instruction in the ninth has much to commend it."<sup>69</sup> And later, "It is of vital importance that the methods of the high school shall not be thrust upon the junior high school. It is equally important that the methods of the lower grades shall not be continued. A wise compromise between the two methods of teaching must be sought."

It is apparent that an abrupt change from one to too many teachers may be more unfortunate for the child than a longer continuance of elementary practice, especially in view of his immaturity. Our aim should be gradual transition to many personalities rather than abrupt, for if abrupt transition between the eighth and ninth grades is undesirable, certainly it will be more so between the sixth and seventh. Every one of the 35 schools has, at least, partial departmentalization of work for all teachers, varying from one subject per teacher to four in two schools, and from two teachers for each seventh grade pupil in one school to nine in another.

Our inquiry called for information relative to the use of the same teachers in junior and senior high school grades, and the subjects which these common teachers teach. In 17 of the 35 schools all subjects in the junior and senior high schools are taught by the same teachers; prevocational and some academic subjects are taught by the same teachers in 13 other junior and senior high schools; all or part of the special subjects in junior and senior high schools are taught by the same teachers in 3 schools; and in 2 schools no subjects in junior and senior high school have common teachers. It appears that in 30 of these

<sup>68</sup> Briggs, T. H. "The Junior High School" Rep. U. S. Com. Ed. 1914. Vol. I. p. 138.

<sup>69</sup> Report of Com. of H. S. Masters' Club of Mass. pp. 15, 37. 1917.



schools the greater part of junior high school teaching is done by those who also teach in the senior high school. This practice should have a marked influence in introducing high school methods. It is to be noted that in these schools elementary school teachers are not teaching in high school for the purpose of economy by the school authorities, but only those may teach in high school who have a high school license.

Closely related to the practice just discussed is that of the relative number of junior high school teachers who have had high school teaching experience. In 17 of these schools all teachers have had high school teaching experience; in 4 more, 75% or more have had such experience; in 4, 50% or more; in 5, 25% or more; in 3, less than 25%; and in 2 there was no reply to the inquiry. The median is 100%, which means that in 17 of these schools 100% of the teachers have had high school teaching experience, and that in 16 less than 100% have had such experience. The average number is 75.5%.

Our inquiry asked, "Do you have supervised study other than in the assembly room?" The number of minutes per day was also called for. Thirty-one schools indicate that definite time is given to supervised study in the grammar grades. Four say "none," but one of these has carefully planned study supervision in the general assembly hall. Eighteen have approximately 15 minutes of directed study daily for each study subject; 11, 25 to 30 minutes; 2 merely answer "yes." Schools indicating 15 minute study periods have a class schedule calling for 40 minute periods, and those having 25 to 30 minute study periods have 50 to 60 minute class periods. Two of the schools answering "yes" and one saying "no" indicate 30 minute class periods.

Relative to the use of the project plan in prevocational work, 4 schools made no report; 8 answered "no"; 20, "yes"; and 3 "in part." While new subject types may not always be accompanied by a change of methods, the presence of manual and domestic arts, agriculture, commercial work, general science, and community civics may reasonably be taken as indices of new aims and new methods.

To summarize, every school indicates departmentalized organization in high or moderate degree, for the most part under conditions that closely approximate regular high school procedure. This is in agreement with the general practice among reorganized schools, which makes departmental organization a pre-



requisite for realizing the other benefits hoped for thru the reorganization movement. Both the Briggs' and Douglass' reports, previously referred to, show that nearly all so-called junior high schools have adopted departmental teaching.

Supervised study is so nearly universal in these schools (31 of 35) that it may be considered a standard feature in Indiana reorganized schools. This practice is in keeping with the recent trend in educational writings respecting junior high school organization as affording a basis for adapting instruction to individuals and for experimentation. It is recommended by Johnston, Briggs, Wood, Davis, and others. Lewis<sup>70</sup> gives it as one of the ten standards for the junior high school.

The use of the project method in prevocational work is not so general as the features just enumerated. About two-thirds of these schools use this method in their grammar grades, the remaining probably do not. Some of those not employing this method in the seventh and eighth grades indicate that they do in the ninth.

A wide use of teachers with high school teaching experience seems to be the standard practice in Indiana junior high schools. This is probably due in part to the fact that the majority of these schools are in rural and village communities where complete fusion of the upper six grades is desirable from the teaching and economic points of view. However, some of the larger schools have their juniors in the same buildings as their senior high school pupils and utilize the same teaching staff, in whole or in part, for both.

In reply to a recent questionnaire by Dr. Briggs, out of 15 Indiana junior high schools replying, 12 stated that the problem of discipline was easier under the new organization, 2, the same, and 1, harder.

The prevailing practice with respect to the foregoing factors indicates that Indiana junior high schools are probably realizing in considerable degree a change to high school methods and to greater freedom in individual choice and action which it implies.

<sup>70</sup> Lewis, E. E. Standards for Measuring Junior High Schools. Univ. of Ia. Extension bulletin, Nov. 1916.

(4) PROVISION FOR SOCIAL ORGANIZATION, EXPLORATION, AND GUIDANCE OTHER THAN SUBJECT AND CURRICULUM CHANGES

Aside from the opportunity for exploration of pupils' interests and capacities thru contact with an enriched curriculum, there are other exploratory and stimulating forces which may be and are commonly used. These are largely of the extra classroom variety and are all the more valuable because removed from classroom restraint and permit a freer and more spontaneous contact between pupil and teacher. The activities or means especially selected for comparison are those frequently found and generally advocated by schools of the reorganized type, and include definitely responsible pupil advisory systems, educational and vocational guidance, extra-classroom social organizations of pupils, and school assemblies.

One of the objections to the departmental system of teaching in grammar grades is that the immature pupil becomes lost and bewildered with his many subjects and many teachers, especially when it is no one's business to be responsible for him in the way of co-ordinating the forces operating upon him. Departmental teachers tend to become over-interested in subject matter, and because of the large numbers of pupils who recite to each daily, the individual pupil is often lost sight of, fails in his work, becomes a repeater, loses interest in school and school work, and seeks the earliest opportunity to drop out of school. Under the one teacher plan, while much of the instruction may have been of mediocre quality, at least the teacher was in position to know the pupil personally, to be acquainted with his strong and weak points, to be able to advise him for his best interests, and to stimulate him to renewed effort.

Many school systems that have employed departmental teaching in the grammar grades most successfully have adopted some teacher advisory plan whereby a given teacher is responsible for a given group or class of pupils, usually from fifteen to thirty. It is the duty of such a teacher adviser to keep in touch with the work of each pupil in her group, not only as pertains to her own subject but in each of his subjects with all his teachers, to learn his strong and weak points, his interests and dislikes, his home and other environing conditions, that the best personal and educational and vocational advice may be given the child for his development.

N. C. Hieronimus,<sup>71</sup> principal of the Richmond, Indiana, junior high school, has recently published an account of the advisory system employed in his school, which is substantially as follows: Each teacher is assigned a group of pupils, not all from the same class but from various classes and grades, each of whom stays with this teacher during his (the pupil's) stay in the junior high school so far as pertains to the advisory system. The adviser keeps in touch with the school and outside interests of each pupil, and with the work of each pupil. Hieronimus favors this plan because it provides a longer and continuous acquaintance with each pupil, permits sex segregation, and throws older and younger pupils together, and makes for solidarity.

Another important factor in the exploration of interests and capacities is that of extra-classroom organizations. Such activities are favored for the coöperation and the initiative they bring out and for their value in developing recreational and avocational interests.

Weatherwax<sup>72</sup> indicates an apparently close relationship between the number of extra-classroom organizations and the per cent the high school enrollments are of the total population in cities of comparative size. Considering median results by schools for per cent of enrollments and the ratio of enrollments to number of clubs per school we have; for cities having 500 or more high school enrollments (7 in all), the three having the highest per cent of the population enrolled (median 2.4%) have an average of 31.3 pupils per club, and the three having the lowest per cent enrollments (median 1.4%) have an average of 50.1 pupils for every club in the school. In schools having from 150 to 499 pupils enrolled (26 in all) the data for the five each having the highest and lowest per cent of enrollments are respectively, 7.1% and 13.8 pupils per club, and 2.3% and 24.5 pupils per club. For schools having less than 150 enrollments (78 in all) the data for the eleven each having the highest and lowest per cent are, 12.7% and 15 pupils per club, and 3.1% and 15.8 pupils per club. For schools of the first two groups, where clubs are most numerous, the relationship between the per cent of enrollments and the number of clubs is high, but in the smaller schools it is not so apparent. Of course other factors enter into the above situation, but the informal social life of the

<sup>71</sup> Hieronimus, N. C. "The Teacher Adviser in the Junior High School" Ed. Adm. & Sup. 3:91.

<sup>72</sup> Weatherwax, L. E. A Study of Extra-classroom Activities in Indiana High Schools. Master's thesis, Ind. University. 1916.



school may reasonably be expected to add a sense of worth-while-ness to school activities, which results in greater enrollments.

Relative to the value of these social organizations Davis says: "The employer who asks for a recommendation cares very little whether the pupil's standing in history is 85% or 91%. What he usually asks is "What kind of a boy is he?" Has he initiative, energy, push? Can he work harmoniously with others and can he lead? Is he socially efficient?"<sup>73</sup> Continuing he says: "The social spirit of the age is reflected in the student life and it has introduced new problems that schoolmen are called upon to solve. This obligation can no longer be ignored nor wilfully pushed aside. It must be faced squarely as an educational question."

Another means of exploring and directing social, educational, and vocational interests is that of the school assembly, not the chorus type of assembly only, but a period in which varied activities and interests are represented, and in which pupils have a very considerable share in participation. The daily auditorium period of the Gary type school represents the most effective means the writer has seen for developing social efficiency, providing motivation for school work, and imparting vocational information. The auditorium activities of the Gary schools and the values resulting therefrom have been well set forth by Bourne<sup>74</sup> in his analysis of the Gary system.

Much of the value of the school assembly depends upon the relation of the assembly activities to the pupil's present needs and interests and upon the extent of his participation in those activities.

Vocational guidance is a matter which is receiving increasing emphasis in the industrial world, in the home, and in the school. The choice of a life career is, perhaps, the most momentous issue the youth has to decide, and about this center many of his most powerful interests.

The Committee on Social Studies says in its report: "The question of vocational guidance is very much in the foreground at present. While there is general agreement that the young need guidance for the vocational aspects of life, as for its other aspects, there is wide divergence of opinion as to the nature of this guidance and the means by which it may best be given."<sup>75</sup> And again, "Much of the mortality that occurs during the eighth and

<sup>73</sup> Davis, J. B. In *Johnston's Modern High School*. pp. 427, 428. New York, 1914.

<sup>74</sup> Bourne, R. S. *The Gary Schools*. pp. 50, 92. Boston, 1916.

<sup>75</sup> Dunn, A. W. *The Social Studies*. Bul. 28, 1916. U. S. Bur. Ed. pp. 26, 27.

ninth years is due to the failure of pupils and parents to see the economic value of the high school course. An opportunity exists to make high school education seem 'worth while' by taking the budding vocational or economic interest as one point of departure."

DATA RELATIVE TO GUIDANCE, SOCIAL ORGANIZATION, AND ASSEMBLY.

*No. of School*

1. Definite advisory organization. Educational guidance thru careful analysis and record of pupil traits, parent conferences, and public parent meetings. Athletic, musical, debating, literary, publication, and boy scout organizations. One assembly weekly with pupil participation in music.
2. No report relative to advisory system, guidance or assembly. No social organizations.
3. Incidental teacher advice. No definite educational or vocational guidance. Athletic and musical organizations. One assembly weekly.
4. Definite advisory system, with definite record of pupil characteristics and report to the principal of the senior high school to guide in the selection of high school courses. Athletic, literary, musical, publication and scouting organizations. One assembly weekly with 25% pupil participation.
5. No data on advisory system or guidance. Athletic organizations. One weekly assembly with no pupil participation.
6. No data.
7. Definite advisory system and card record. No definite guidance. Departmental and musical organizations. One weekly assembly with a small amount of pupil participation.
8. No data relative to advice, guidance, or assembly. Athletic organizations.
9. Definite teacher advisory system. No vocational guidance. Athletic, musical, and student government organizations. Two assemblies a week with very little pupil participation.
10. Room teacher system. No definite guidance. Athletic, civic, literary, musical, publication, and scouting organizations. Two assemblies monthly with 50% pupil participation.
11. No advisory system now but will have. Definite provision for educational and vocational guidance thru the English department by the Grand Rapids plan. Athletic and musical organizations. No report on assembly.
12. No advisory system. No plan of guidance. Departmental, musical, and publication organizations. Assemblies at the call of the principal, with an average of 1 a week with but little pupil participation.
13. Definite teacher advisory system. Vocational guidance thru auditorium work. Athletic, civic, musical, and student government organizations. Daily auditorium period for each pupil with much pupil participation.

14. Definite advisory system. No systematic vocational guidance. No report on social organizations. One assembly weekly with nearly all pupil participation.
15. No report on advice, guidance, or assemblies. Athletic organization.
16. No systematic advisory system or guidance. Athletic and musical organizations. Two assemblies weekly with 50% pupil participation.
17. No report.
18. No report.
19. Definite advisory plan. No report on guidance. Athletic organization. One assembly weekly.
20. Definite advisory plan. No report on guidance. Athletic organization. One weekly assembly.
21. Definite teacher adviser. Educational and vocational guidance thru study of local needs and parent conferences. Athletic and musical organizations. Daily assemblies with 50% pupil participation.
22. Reports "yes" on adviser, and has vocational guidance thru manual arts. No social organizations below grade nine. No report on assemblies.
23. Advisory system, but no systematic plan of educational or vocational guidance. Athletic, debating, musical, publication, and scouting organizations. One weekly assembly.
24. Advisory system. Talks by the superintendent and parent conferences for educational guidance. Athletic, literary, and musical organizations. No report on assemblies.
25. Very definite advisory system. No definite plan for guidance. Athletic, civic, literary, musical, publication, and student government organizations. One weekly assembly with some pupil participation.
26. Teachers act as advisers. No guidance plan indicated. No report on social organizations. Two assemblies monthly with 10% pupil participation.
27. No advisory system or guidance plan. Athletic, civic, and musical organizations. Twenty minute assembly daily.
28. Advisory system. Guidance incidental. Athletic and musical organizations. Two weekly assemblies with 50% pupil participation.
29. Agricultural and musical organizations. No report on other features.
30. Definite advisory system. Vocational guidance thru parent conferences and vocational director. Athletic, civic, literary, musical, publication, and student government organizations. No report on assemblies.
31. Principal is adviser. Guidance thru woodwork. Athletic and literary organizations.
32. All teachers are advisers. Guidance thru pupil conferences. Three assemblies monthly with 50% pupil participation. No report on social organizations.
33. Teacher advisers. Guidance thru manual arts only. Athletic, musical, and publication organizations. No report on assemblies.
34. Athletic organization. No report on assemblies.
35. Educational and vocational guidance thru superintendent and supervisors of subjects. Athletic, musical, social, and student government organizations. One weekly assembly with very little pupil participation.



The data upon which the foregoing summary is based show that 22 schools in all give an affirmative reply to the inquiry relative to teacher advisers, but "yes" without indication of means, or "all teachers," or "pupil can consult any teacher," or "incidental" do not warrant our concluding that approximately seven twelfths of these schools are consciously giving personal and educational and vocational guidance to pupils. One school says "no, but shall have," 3 say "no" and 9 make no reply. However, as about one-half these schools are very small (from 50 to 100 pupils in the six upper grades) where there is intimate contact of pupils with teachers, the situation may not demand the same definitely organized advisory system which is desirable in the larger school.

Eight of the 35 schools seem to have some definite plan of educational and vocational guidance, the more significant methods being, card record of pupil characteristics, parent conferences, a study of vocations, lantern slides and talks in auditorium periods relative to vocational life, and thru a vocational director. A few other schools indicate guidance thru pupil conferences (probably to correct errors in class exercises, incidental, or manual arts, any of which are of very questionable value for the purpose designated. For the most part only the larger cities seem to be attempting the problem of guidance and by no means all of such schools. At the present time we can hardly say that these so-called reorganized schools have established definite advisory or guidance plans as standards of practice.

A considerable variety of extra-classroom organizations are open to seventh and eighth grade pupils in these schools, and the list is greater for the ninth grade. But two schools report no such organizations; one a small rural school having but 13 pupils in the eighth grade, and perhaps a majority of these transported in school vans so that no opportunity is afforded for remaining after school hours; and the other, a city school, having more than 150 pupils in the eighth grade. Seven schools made no reply to the inquiry. All but one of these schools not reporting are small rural schools having, probably, not more than one or two such organizations for each school. Of the 26 schools reporting such organizations, 5 report but 1 organization each; 8 report 2 each; 5, 3 each; 2, 4 each; and 6 report 5 or more each. The median number is 2 and the average, 2.64 per school. Athletics and musical activities are the ones most commonly found, the

former in 22 of the 26 schools, and the latter in 20. In 8 there are school publications, literary clubs in 7, civic clubs in 6, student government organizations in 6, and boy scouts in 4. From the showing of these schools, two or more types of extra-classroom social activities appear to be the common practice, as a means of developing the latent social qualities of grammar grade pupils.

But 22 schools were questioned relative to assemblies. One made no reply, and the remaining 21 indicate some time given to assemblies. Eleven report one assembly a week; 2, two assemblies a month; 1, three a month; 3, twice a week; and 4 daily. The writer has visited many of these schools, as well as some of the 13 from which reports were not received, and in no case has he found the school without an adequate assembly room. The data at hand indicate that one assembly a week is the prevailing tendency.

#### SUMMARY.

Provision for teacher advisory systems has not been perfected as yet in these schools; about one-third have definite organization, another third have a more or less indefinite provision, but the tendency is, without doubt, in the direction of improvement.

Definite provision for educational or vocational guidance is being well worked out by a few schools, but such organization is not sufficiently common to make it a standard feature in reorganized schools as yet.

The data relative to social organization would seem to warrant provision for a minimum of two such activities in each school, one providing for physical activity and the other of a musical or other nature to suit local conditions, with an increasing number of organizations in the larger schools.

One assembly period a week is the more common practice in the grammar grades of these schools, as it probably is in the senior high school as well. Data submitted do not indicate that activities involving active pupil participation are common. Personal experience, based on much high school visitation, leaves the impression that the typical assembly activities are, the formal school announcements given by the principal or teachers, occasional short talks by visitors, and a very limited amount of chorus singing in which large numbers of the pupils do not participate at all.

(5) SUPPLEMENTARY FEATURES OF PRACTICE IN JUNIOR HIGH SCHOOLS.  
TABLE 8.

## SUPPLEMENTARY FEATURES OF PRACTICE.

NO. OF SCHOOL	GRADES INCLUDED	TYPE OF ORGANIZATION CLAIMED	NO. OF SCHOOLS AND HOUSING*	TIME		NO. YRS. TRAINING ABOVE H. S.	NO. YRS. EX-PERIENCE	% COLLEGE GRADUATES	TEACHER DATA		% MEN	SALARY	CONDITIONS OF ADMISSION†
				DISTRIBUTION NO. WEEKS IN YEAR	NO. MINS. IN CLASS PERIOD				% WOMEN	% COLLEGE GRADUATES			
1	7, 8, 9	6-3-3	1 (esh) vn	36	55	...	...	46	67	...	33	...	def. sp.
2	7, 8, 9	6-3-3	1 (h)	32	40	3.0	11	60	60	...	40	783	none
3	7, 8, 9	5-3-4	1 (s) vn	36	45	2.5	8	32	95	...	5	712	none
4	7, 8, 9	6-3-3	1 (esh) n	36	60	2.6	5	6	56	...	44	720	lim. r.
5	7, 8, 9	6-3-3	1 (h)	32	40	3.0	4	50	50	...	50	640	none
6	7, 8, 9	6-3-3	1 (h)	32	40	3.0	4	40	60	...	40	660	none
7	7, 8	6-2-4	1 (s) vn	36	40	2.0	17	29	71	...	29	...	lim. sp.
8	7, 8, 9	6-3-3	1 (h)	32	40	...	...	...	60	...	40	700	...
9	7, 8, 9	6-6	1 (h)	32	40	...	...	...	50	...	50	...	...
10	7, 8, 9	6-3-3	2 (1h, 1s)	40	60	3.3	7	52	62	...	38	890	def. p.
11	7, 8	6-2-4	1 (h)	36	40	2.4	16	38	87	...	13	720	lim.
12	8, 9	7-5	1 (h)	40	40	...	...	...	79	...	21	800	none
13	7, 8, 9?	6-6	2 (he)†	40	60	4.2	9	94	68	...	32	950	def. sp.
14	7a-9b	6-3-3	1 (h)	34	60	2.6	10	20	40	...	60	...	lim. r.
15	7, 8, 9	6-3-3	1 (h)	32	40	2.0	5	...	67	...	33	630	none
16	7, 8, 9	6-6	1 (h)	36	60	3.2	9	...	58	...	42	745	lim.
17	7, 8, 9	6-3-3	1 (h)	32	40	4.0	5	100	60	...	40	808	none
18	7, 8, 9	6-3-3	1 (h)	32	40	...	...	...	...	...	...	...	none
19	7, 8, 9	6-3-3	1 (h)	32	40	3.5	5	60	60	...	40	762	none
20	7, 8, 9	6-3-3	1 (e)	36	40	2.9	8	38	50	...	50	720	lim.
21	8, 9	7-5	1 (h)	36	45	3.8	8	61	75	...	25	...	lim.
22	8	8-4	1 (e)	36	30†	1.6	10	0	82	...	18	675	lim.
23	7, 8, 9	6-3-3	1 (h)	32	40	3.5	8	57	43	...	57	576	none
24	7, 8	6-2-4	1 (e)	36	30	1.4	15	0	83	...	17	685	none
25	7, 8	6-2-4	1 (s)	36	50	2.4	16	43	48	...	52	902	def. p



TABLE 8—Continued.

NO. OF SCHOOL	GRADE INCLUDED	TYPE OF ORGANIZATION CLAIMED	NO. OF SCHOOLS AND HOUSING*	DISTRIBUTION NO. WEEKS IN YEAR	TIME NO. MINS. IN CLASS PERIOD	NO. YRS. TRAINING ABOVE H. S.	NO. YRS. EXPERIENCE	% COLLEGE GRADUATES	TEACHER DATA % WOMEN	% MEN	SALARY	CONDITIONS OF ADMISSION†
26	7, 8, 9	6-3-3	1 (h)	32	40	....	....	40	60	40	....	none
27	7, 8	6-6	1 (h)	36	40	3.0	8	60	60	40	720	none
28	7, 8	6-6	1 (h)	36	60	3.8	7	93	75	25	787	lim.
29	7, 8, 9	6-3-3	1 (h)	32	40	2.0	6	....	60	40	....	none
30	7, 8, 9	6-3-3	1 (e) n	36	60	2.5	10	36	73	27	720	lim.
31	7, 8	6-2-4	1 (e) vn	36	30	1.5	5	0	71	29	643	lim.
32	7, 8, 9	6-3-3	1 (h)	32	40	....	....	....	....	....	....	none
33	7, 8, 9	6-3-3	1 (h)	36	55	2.6	9	22	78	22	....	lim.
34	7, 8, 9	6-3-3	1 (h)	32	40	2.6	7	....	60	40	704	none
35	7, 8	6-2-4	1 (h)	36	40	3.0	8	43	43	57	720	lim.

\* e, h, s, n, vn mean elementary school, high school, separate, near to high school, very near to high school, respectively.

† def., lim., sp., p., t., mean definite, limited, special program, prevocational program, and regular program, respectively.

? Data not entirely clear.

? Such organization not claimed but assigned on basis of statements in published surveys.

Note: Schools 1 and 4 have grades 9 with the senior high school, part of grade 7 with elementary school, and the rest in separate building. Schools 2, 5, 6, 8, 9, 10, 13, 15, 17, 18, 19, 26, 29, 32, 34, have grades 1 to 12 in the same building.

Table 8 indicates several features of practice not included under our four main headings, and should be read as follows: school No. 3 has a junior high school organization which includes the sixth, seventh, and eighth grades; has an administrative grouping of 5, 3, and 4 grades in the partial units of the system; has 1 junior high school, separate from both the lower grades and the senior high school, which is housed in a building very near the high school (within 50 feet); has a 36 week school year, and a 45 minute class period; has a teaching staff with an average of 2.5 years of training beyond high school graduation, with an average of 8 years' teaching experience, with 32% of the number college graduates, 95% women, 5% men, and an average salary of \$712; and has no definite provision for the admission of over-age pupils to these junior high school grades.

#### GRADES INCLUDED.

Twenty-two of the 35 schools include grades seven, eight, and nine in their junior high school organization; 9, the seventh and eighth; 2, the eighth and ninth; 1, the sixth, seventh, and eighth; and 1, the eighth only. The eighth grade is included in all, the seventh in all but three, and the ninth in twenty-four.

If the object of the junior high school is to bridge the gap between the elementary and high schools and to provide for a gradual transition, then the last grade of the present elementary school and the first of the high school should be included in the reorganization if the objects named are to be realized in the highest degree. Lewis says: "If the ninth grade is not included the organization cannot be called a junior high school according to our present conception of that term."<sup>76</sup> This may be Lewis' conception of the term, and it seems to accord with the statement of aims indicated above, but it is not that in actual practice in much more than 50% of schools claiming reorganization. Douglass<sup>77</sup> reports on 100 schools claiming junior high school organization, of which 41 include grades seven, eight, and nine; 5, the seventh to the tenth inclusive; 4, the eighth and ninth; and 3 indicate a six-six plan. This makes a total of 53% that include grade nine with the eighth in such reorganization. Twenty-four of the 35 Indiana junior type schools include grades eight and

<sup>76</sup> Lewis, E. E. Standards for Measuring Junior High Schools. bul. 25. Univ. Ia. 1916.

<sup>77</sup> Douglas, A. A. The Junior High School. XVth Year Book of Nat. Soc., etc., part III, 1916. p. 134.

nine, or approximately 69%, which is a considerably higher percent than for schools of the junior type scattered over the country generally.

#### TYPE OF ADMINISTRATIVE ORGANIZATION CLAIMED.

Twenty of these schools claim a 6-3-3 type of organization; 6, a 6-2-4 type; 5, a 6-6 type; 1, a 5-3-4 type; and 1, an 8-4 plan; and 2, a 7-5 plan.

If a 6-3-3 plan means that the first three years of the secondary course constitutes a distinctive unit in itself, then but two schools, numbers 1 and 10, with clearly differentiated courses for the junior high school, are entitled to this classification. Three or four of these schools claiming a 6-3-3 type are essentially of the 6-2-4 type, while all the others claiming a 6-3-3 organization should properly be classed as of the 6-6 type. Approximately 60% of these schools are of the 6-6 type and 25% of the 6-2-4 type.

#### HOUSING.

In 25 cities and towns the junior high school is housed in the same building with the senior high school, and in at least 14 of these the junior pupils occupy the same assembly and recitation rooms as the senior pupils. In city 10 there is a second junior school in a separate building. In 5 cities the whole or the major part of the junior organization is in a separate building, in two of which schools, 1 and 4, the building is inadequate in size and some of the seventh grade pupils remain in a nearby elementary school building while the ninth grade occupies the senior high school building which is also close by (within one block). In 5 cities the junior school occupies a floor of an elementary school building, and in two of these the junior school is near or very near the senior building. In all but 5 of the 37 junior schools the junior school is within 5 blocks of the senior school, and in 2 of these cases the ninth grade is in the junior school with the eighth so that adequate provision is made for the overlapping of the work of these two grades.

All of these 37 junior schools have auditoriums or large assembly rooms suitable for meetings of the entire school. Every school has adequate shop and laboratory facilities for wood work, cooking, and sewing, and all those located in high school buildings have access to the regular laboratories for general science in case the subject is given, as well as for agriculture.



## TIME DISTRIBUTION

Three schools have a term of 40 weeks; 17, 36 weeks; 1, 34 weeks; and 14, 32 weeks. The median is 36 weeks and the average, 34.7 weeks.

Seven schools report a 60 minute class period; 2, 55; 1, 50; 2, 45; 20, 40; and 3, 30 minutes. The median is 40 and the average 44.4 minutes. In all but the 3-30 minute period schools and 1 of the 40 minute period schools some time is devoted to supervised study in each study subject, varying from 15 to 30 minutes for each class period. A school day of 6-60 minute periods may be desirable in the city school but it is doubtful whether the small rural school with classes of from 10 to 20 pupils can afford to change from 8-40 minute periods to 6-60 minute periods as the number of teachers would have to be very materially increased. Douglass<sup>78</sup> reports on 90 schools of which 13 have 60 minute periods; 5, 50; 12, 45 to 49; 39, 40 to 44; 4, 35; 15, 30; 1, 25; and 1, 20 minute periods. The median for Douglass' returns is 40 minutes and the average 41.9.

## TEACHER DATA.

Teacher training. Twenty-eight schools reported data from which to compute the number of years of training of teachers beyond the four year high school course. As training of one and a fraction years was counted as one year in a few cases, the figures indicating the amount of training may be slightly below rather than above the actual facts. Two schools report an average training of 4 or more years beyond high school for junior high school teachers, the same teachers being also teachers in the senior high school; 11 report an average of 3 but less than 4 years; 12, 2 but less than 3 years; 3, 1 but less than 2 years; and none less than 1 year. The median by schools is 2.96 years and the average 2.71.

The North Central Association of Colleges and Secondary Schools<sup>79</sup> recommends the same teacher training standards for junior high school teachers as for senior high school teachers, namely, an A.B. degree from a standard college with eleven semester hours in education courses. Very wisely the Association has not attempted to make its recommendation a required standard. Many superintendents and educational writers are not at all convinced that, under our present conditions of teacher training, this is a realizable or even a desirable standard.

<sup>78</sup> Douglass, A. A. The Junior High School. XVth Year Book of the Nat. Soc. for the Study of Ed. Part III, 1916. p. 134.

<sup>79</sup> Proceedings of the N. C. A. of Colleges & Secondary Schools, 1916.

Twenty-eight schools reported the average years of teaching experience of their junior high school teachers. In 4 schools the average is 15 or more years; in 4, 10 but less than 15 years; in 18, 5 but less than 10 years; and in 2, 4 years. The median by schools is 8 years and the average 8.6.

Twenty-six schools reported data from which the per cent of college graduates among junior high school teachers has been computed. Three schools have none; 3, more than 5% but less than 25%; 10, more than 25% but less than 50%; 7, 50% but less than 75%; and 3, more than 75%. The median by schools is 41.5% and the average, 43.1%.

Thirty-three schools reported data from which the per cent of men and women teachers in junior high schools has been computed. Four schools have 40% but less than 50% women teachers; 5, 50% but less than 60%; 13, 60% but less than 70%; 7, 70% but less than 80%; 3, 80% but less than 90%; and 1, 95%. The median per cent of women teachers by schools is 60 and the average 64. The corresponding data for men teachers are 40% and 36% respectively.

Data submitted in a later section show that the per cent of men teachers is far greater in the schools claiming junior high school organization than in other schools.

Many of our leading writers on educational theory advocate a higher per cent of men teachers in the grammar grades. Relative to junior high school teachers, Johnston says: "We shall have better teachers—and more men teachers—. More men will become junior high school principals, and there will be a more nearly divided teaching staff on the lines of sex."<sup>80</sup> Snedden writes: "If the state is willing to pay the price, a certain proportion of men teachers should be assigned to departmental positions, not primarily because they are necessarily better teachers than women, but because it is desirable to introduce, in boys classes, at any rate, the influence of masculine personality."<sup>81</sup>

Twenty-five schools contributed data relative to average salaries paid to junior high school teachers. One school reports an average salary of \$576; 3, \$600 but less than \$650; 3, \$650 but less than \$700; 10, \$700 but less than \$750; 3, \$750 but less than \$800; 2, \$800 but less than \$850; 1, \$850 but less than \$900; and 2 more than \$900. The median by schools is \$720 and the average \$735.

<sup>80</sup> Johnston, C. H. *The Junior High School*. Ed. Ad. & Sup. 2:419.

<sup>81</sup> Snedden, D. *Education for Children from 12 to 14*, etc. Ed. Adm. & Sup. 2:427.

## ADMISSION TO JUNIOR HIGH SCHOOL.

It was indicated in a previous section that definite provision for over-age pupils was ranked lowest of the eighteen items essential to junior high school organization. In other words the judgment of these 25 men is that the junior high school is an institution primarily for normal and bright children. Their practice seems to accord with this judgment. Sixteen of these 35 schools state that no provision is made for the over-age child in these grades. Four only of the larger cities indicate rather definite provision for such children. School number 1 states that special groups of over-age and slow-progress pupils are brought into the junior high school, and that programs are made to suit group and individual needs. Some pupils in this school are admitted from as low as the second grade. School number 10 states that pupils ready for the seventh grade, who are over fourteen years old, may choose the industrial work of the eighth year program in place of part of the academic work of the seventh. School number 13 indicates individual programs for all exceptional children in all grades, and school number 25 states that over-age pupils are advanced from the sixth grade without regular promotion on the advice of the elementary school principal, and that such pupils are given a program containing much industrial work. Two schools made no response to this item, and the remaining 13 indicated a very limited provision for the admission of over-age pupils regardless of the previous scholastic attainments when it would seem to be to the best interests of the child to do so. Some of these schools say, "a few each year," "occasionally," and the like. One assigns special programs for any such pupils, and two others assign the regular seventh grade work, while ten do not indicate the nature of the work assigned in case they admit such pupils. In but two of these schools is there any evidence to show that over-age pupils are admitted from any but the sixth grade. Aside from those schools having clearly differentiated curricula provision for over-age pupils, not regularly promoted from the sixth grade, has been considered not at all or in very limited degree.

Douglass<sup>82</sup> reports that 68 of 94 junior schools require regular promotion from the preceding grade as a requirement for entrance while in Indiana schools, 16 of 33 reporting have the same requirement, although some of those stating limited provision may easily fall in this class.

<sup>82</sup> (Reference previously given, 78 ) p. 48.



Educational writers have urged consideration of the needs of over-age children as one of the important features of the junior high school movement. Snedden urges that "all children between 12 and 15 years of age (including children under twelve ready for the seventh grade, and excluding children under fifteen ready for the regular or senior high school) should be sent to the central Junior High School or Intermediate School."<sup>83</sup> Johnston says: "The pupil population of the junior high school will include not only those now in seventh and eighth and ninth grades, but all of these ages now 'over-age' in the elementary six grades and all over fourteen who for any reason are out of school. It is a pupil democracy."<sup>84</sup> Spaulding says that "promotion must be determined not by what a pupil has learned, but by what he needs to learn."<sup>85</sup>

No doubt many pupils have been done great injustice in the past by compelling all to reach a common level of achievement in every stage of academic work before securing advancement to the next, but it is not clear that equal injustice may not be done in going to the opposite extreme of promoting pupils on the age basis alone. Even the basis of educational need is a very doubtful experiment unless the capacity of the child be carefully considered in this connection. Other factors should be considered with both of the foregoing as, intellectual maturity, social maturity, physical development, and probable occupational interests and needs.

<sup>83</sup> Snedden, D. (Reference 81) p. 426.

<sup>84</sup> Johnston, C. H. (Reference 80) p. 418.

<sup>85</sup> Spaulding, F. E. Portland, Ore., Survey. p. 165. 1913.

- d. Departmental school standards and their comparison with junior high school standards.

By some it is contended that the intermediate or junior high school has effected no reorganization that good departmental schools generally have not accomplished. Others, who grant the leadership of the junior type school, maintain that probably many departmental schools are entitled to junior high school classification, not on the basis of name claimed, but rather on that of real reorganization.

It is the purpose of this section to determine departmental school standards and to compare them with those previously determined for the so-called junior high schools.

#### (1) SUBJECTS OF STUDY MODIFICATIONS IN DEPARTMENTAL SCHOOLS.

Table 9 shows the subject offerings in departmental schools and the number of class periods per week assigned to each subject, and is to be read as table 5 under section c (1).

Household and manual arts and drawing periods have been assigned on the basis of 40 to 50 minute periods, as in junior high schools. As several schools give but 30 minutes to such subject periods, their periods are represented in fractional units in some cases.









## NEW SUBJECTS.

Household or manual arts or agriculture are required in every seventh and eighth grade for two recitation periods weekly by State Board regulation.<sup>1</sup> In 3 of these schools the time distribution of subjects is not indicated; in 3, 1 period a week (of 40 or 50 minutes); in 6,  $1\frac{1}{2}$  periods; in 16, 2 periods; in 2, 3 periods; and in 5, 4 periods. The median number of periods required in the 32 schools is 2, and the average is for manual training 2 and for household arts 2.1. Additional work with the ninth grade is elective for some pupils in three of these schools. Agriculture is required in 10 schools. In 1 the time is not indicated; in 4, 2 periods a week; in 2,  $1\frac{1}{2}$  periods; and in 3, 1 period. The average for the 35 schools is .4 period a week. The total average time for household or manual arts and agriculture is approximately 2.2 periods a week. This average is but .4 periods a week less than for the same type of work in the junior high school group, and if we consider the number of periods regardless of length, the time is the same.

General science is required in the eighth grade of but one of these schools and may be taken by some pupils with the ninth grade in six schools. Twelve schools offer the subject in grade nine. Thirteen of the junior type schools offer general science in grade nine, in three of which it is elective for some eighth grade pupils, and in 15 of the junior type eighth grades the subject is required, or the subject is offered in 28 of the 35 junior schools and in but 13 of the departmental schools in grades eight or nine.

Algebra is required in grade 8A in two schools, daily, and bookkeeping in one twice a week.

Drawing (freehand) is required in 31 schools and is elective in one with the ninth grade for some pupils. In 4 schools no time is indicated; in 1,  $\frac{1}{2}$  periods a week; in 16, 1 period; in 3,  $1\frac{1}{2}$  periods; in 6, 2 periods; and in 1, 3 periods. The median is 1 period and the average 1.2.

Thirty-two schools require music and in one it is elective. In 2 schools the time is not indicated; in 6, 1 period a week; in 23, 2 periods; and in 1, 3 periods. The median is 2 periods and the average, 1.7 periods. Music periods average about 30 minutes in length. Conditions with respect to the number of periods in drawing and music are approximately the same as in the junior

<sup>1</sup> Uniform Course of Study for the Elementary Schools of Indiana. 1915-16. p. 214.



type schools, where both subjects are required on the average 1.3 periods weekly, with periods averaging about 44 minutes in length.

Physical training is required in 7 of the departmental schools and is elective in 1 for about 1.5 periods a week, while it is required in 10 and elective in 1 of the junior schools.

Twenty-three departmental schools report no offering of high school subjects as eighth grade electives, the remaining 12 offering one or more of such electives to strong eighth grade pupils who have completed a part of the eighth grade subjects, or as an extra subject. The following subjects are mentioned: algebra by 7 schools, English by 7, German by 8, Latin by 9, general science by 6, botany by 1, ancient history by 1, drawing by 1, bookkeeping by 1, physical training by 1, household arts by 3, and manual arts by 3. In the junior type schools German is available to all or part of eighth grade pupils in 27 of the 35 schools and Latin in 12, in other respects the choice of electives being about the same.

#### OLD SUBJECTS.

The total time distribution in these schools for English is: 2, no time indicated; 2, 5 periods a week; 3, 7 periods; 1, 9 periods; 3, 10 periods; 3, 11 periods; 1,  $11\frac{1}{2}$  periods; 3, 12 periods; 2, 13 periods; 4, 14 periods; 1,  $14\frac{1}{2}$  periods; and 10, 15 periods. The median is 13 periods a week and the average 12.

In reading 7 schools report undistributed time; 1, 2 periods a week; 2, 3 periods; 5, 4 periods; and 20, 5 periods. The median of the 28 is 5 and the average 4.6 periods a week. The probable average with the 7 included is about 4.3 periods. This is nearly double the number of weekly periods assigned to literature in the junior type schools, which was 2.3 periods.

In grammar-composition 7 schools report undistributed time; 1, 3 periods a week; 2, 4 periods; 21, 5 periods; 1, 6 periods; 3, 7 periods. The median for the 28 is 5 periods and the average 5.1. The probable average including the 7 is about 4.5 periods a week.

In spelling four schools indicate no distribution of the time; 3 indicate no spelling; 5, 1 period a week; 2,  $2\frac{1}{2}$  periods; 8, 2 periods; 12,  $2\frac{1}{2}$  periods; and 1, 3 periods. The median for the 31 schools is 2 and the average 1.8, which is about one period a week more than in the junior type schools.

In writing 3 schools indicate no distribution of the English time; 11, no time; 3, 1 period a week; 1,  $1\frac{1}{2}$  periods; 6, 2 periods; 11,  $2\frac{1}{2}$  periods. The median for the 32 schools is 2 periods a week and the average 1.7, which is 1.2 periods a week more than in the junior type schools.

The average number of periods a week for English, exclusive of writing, is approximately 10.3 periods, while in the junior type schools the corresponding time is 5.6 periods a week.

Arithmetic is assigned 5 periods a week by 31 schools; time is not indicated by 2 schools; and in the remaining 2 arithmetic is given daily for one-half year with algebra the other half year. The median number of periods a week is 5 and the average, approximately 5. This is .4 period a week more than in the junior schools, where one-half the schools gave the subject 4 periods a week, with an average of 4.6.

In history-civics one school does not indicate total time but indicates a separate course in civics; 2 schools report 3 periods a week; 5, 4 periods; 24, 5 periods; 3, 7 periods. The median is 5 and the average 4.9. Fifteen schools indicate a separate course in civics, in most cases 4 or 5 periods weekly during the second half of the 8th grade; one school devoted 2 out of 5 history periods to civics, and 7, 1 period. Two schools check civics but do not indicate the time given. Twenty-five of the 35 schools indicate 1 or more periods a week for civics, with such readings as Dunn, Nida, Harrison, and Lapp as texts and reference books. The total number of weekly periods for history-civics is about the same in junior and departmental schools, but a somewhat larger offering in civics is given by the departmental schools.

Ten school do not offer physiology-hygiene in the eighth grade; 3 do not indicate the time given; 9, 2 periods; 6, 3 periods; 3, 4 periods; 4, 5 periods. The median is 2 and the average, for 32 schools, 2.1. This is .9 period a week more on the average for all schools than among junior high schools, which had an average of 1.2 periods.

Twenty-one schools do not require geography in grade eight; 3 require the subject but do not indicate the time; 4, 2 periods a week (4 periods for a half year); 2, 3 periods; 3, 4 periods; and 2, 5 periods. The median is 0 periods and the average, 1.1 periods. The average for the geography-physiology-hygiene combination is 3.2 periods a week. Six schools require no science, but in three of these general science is elective for some

pupils in grade eight, and agriculture is required in two of them. But 9 junior type schools offer geography in grade eight as contrasted with 14 departmental schools.

In conclusion, the junior type schools offer approximately the same work in agriculture, manual and household arts as do the departmental schools. General science is offered in more than twice as many junior type schools as in departmental schools, and also about three times as many junior schools offer eighth grade pupils an opportunity to take some high school subject or subjects. About twice as many periods a week are given by departmental schools to work in English, which is probably indicative of a more formal type of reading, grammar, and spelling with less unity on the whole than in the junior schools. On the other hand the departmental schools, in larger numbers, seem to have effected a greater degree of reorganization in their history-civics courses.



(2) PROVISION FOR INDIVIDUAL DIFFERENCES IN  
DEPARTMENTAL SCHOOLS.

TABLE 10.

PROVISION FOR INDIVIDUAL DIFFERENCES IN DEPARTMENTAL SCHOOLS

SCHOOL	FREQUENCY OF PROMOTION	METHOD OF PROMOTION	PROGRESS GROUPS*	PROVISION FOR INDIVIDUALS†
1	½ year	subject	a & s	ex, sp-as
2	½ year	grade	none	ex
3	1 year	grade	none	sp-as
4	½ year	subj. in part	a & s	ex, sp-h, ir-p
5	½ year	grade	none	ex
6	½ year	subject	none	ex
7	½ year	subj. in part	none	none
8	1 year	grade	none	none
9	½ year	subject	a & s	.....
10	½ year	subject	a & s	.....
11	½ year	grade	none	.....
12	½ year	grade	none	none
13	½ year	subject	a & s-lim.	ex, ir-p
14	½ year	subject	a & s	ex, v
15	½ year	grade	none	.....
16	½ year	grade	none	ir-p
17	½ year	subject	a & s-lim.	.....
18	½ year	grade	none	ex
19	½ year	subject	none	ex, fr, ir-p
20	½ year	grade	none	none
21	1 year	grade	none	ex
22	1 year	grade	none	none
23	½ year	grade	none	ex
24	½ year	grade	a & s	.....
25	1 year	grade	.....	.....
26	½ year	grade	none	ir-p
27	1 year	subject	none+	ex
28	1 year	grade	none	none
29	1 year	grade	none	ir-p
30	½ year	grade	a	ex
31	1 year	grade	none	.....
32	1 year	grade	none	none
33	1 year	grade	none	none
34	½ year	grade	none	.....
35	1 year	grade	none	max. min, sp-h.

Table 10 should be read: school 1 promotes half-yearly, promotes by subject, provides accelerant and slow groups, and provides for flexible individual advancement thru extra subjects and special assignments to some pupils.

Because of the subject of study showing of this group of schools, the inquiry relative to differentiated courses was not submitted, it being evident that such provision did not exist as

\* a & s and lim. mean accelerant and slow progress groups and limited, respectively.

† ex, sp-as, sp-h, ir-p, v, fr, max, min, mean respectively extra subject, special assignment, special help, irregular promotion, vacation school, fewer subjects, maximum work, minimum work.

+ See discussion on progress groups.

two-thirds of these schools offer no electives and those that do only to individual pupils with the ninth grade. As but three of these schools are in cities of more than 20,000 population, we should scarcely expect to find many of the 35 making provision for differentiated curricula. It may be added that in Indiana cities of 50,000 and over, not included in this study, very little provision is made for differentiated opportunities for all seventh and eighth grade pupils.

Twelve schools have yearly promotions and 23, half yearly. Here, as in the junior high school group, the determining factor is chiefly that of the size of the school. But three schools of 3,000 and more population have yearly promotions.

But 11 of these schools have promotion by subject, while in 24 it is by grade. This is in sharp contrast with the junior high school group where 32 of the 35 schools have promotion by subject. In view of the fact that a majority of these seventh and eighth grades are housed in the high school building and have departmental teaching in practically all subjects, it appears that the possibilities for plans of flexible advancement are not at all adequately utilized.

Eight schools report some provision for accelerant and slow groups, although in two of the largest of these cities the provision is conditioned by "when possible" and "in a few classes," which indicates that such procedure is scarcely a fixed policy of these schools. School number 30 reports an accelerant group but no retarded group, while school number 27 has been trying the plan of having all eighth grade pupils cover a year's work in a half year and then have all who fail repeat the work.

Schools were asked as to the provision made for rapid advancement of bright pupils. Ten schools made no response to this item. The program of studies for the eighth grade shows that 12 schools offer some ninth grade electives to strong eighth grade pupils. Three other schools report special assignments (not extra subjects) for strong pupils; one indicates minimum work and special help for slow pupils; one, vacation school; five, irregular or double promotion in exceptional cases; and eight indicate that no provision is made for individual progress. Probably individual help, in a limited way, is given in most schools, but without definitely organized plan. If a list of specific provisions for individual adjustment had been submitted for checking, no doubt, many features of practice would have been reported that

are not given in this report. It is not evident that systematic planning for adjustment of group and individual differences is a marked feature of practice in any considerable number of these departmental schools.

### (3) METHOD INDICES IN DEPARTMENTAL SCHOOLS.

TABLE 11

## FACTORS IN METHOD MODIFICATION IN DEPARTMENTAL SCHOOLS

SCHOOL	SUPERVISED STUDY	PROJECT PLAN	JUNIOR H. S. WORK BY H. S. TEACHERS	% DEPARTMENTAL TEACHERS WITH H. S. EXPERIENCE
1	15 min-	yes	part special	14
2	15	no	special subject	....
3	0	no	sp. & part ac.	50+
4	0	yes	sp. & part ac.	33 (ac.)
5	15	in part	sp. & English	40 (ac.)
6	30	in part	sp. & ac. in 8th	66 (8th)
7	geog- only	in part	sp. & part ac.	80
8	20	yes	special	43
9	25	....	special	30
10	30	yes	none	....
11	25	....	none	18
12	0	yes	music & dr.	20
13	0	yes	H. S. subjects	0
14	15	yes	none	0
15	0	....	domestic science	14
16	25	yes	none	0
17	10	no	m. tr-d. sc-com.	33
18	0	yes	special	0
19	0	in part	none	11
20	25	yes	special	71
21	arith- only	yes	special	40
22	0	yes	sp. & English	75+
23	some subj-	yes	m. tr. & dom. sc.	25+
24	25	yes	none+	0
25	0	....	sp. Eng. math.	100
26	0	....	none	....
27	0	no	special	25
28	15 (total)	yes	special	100
29	some subj-	yes	special	....
30	0	in part	none+	....
31	0	in part	sp. & English	....
32	15	in part	specia <sup>1</sup>	....
33	0	no	sp. read., hist.	71
34	some subj-	yes	special	50+
35	0	yes	special	28

The degree of departmentalization in these schools has been determined from data relative to the number of different teachers a normal pupil has in any given term in grades six, seven, eight and nine. The tabulated replies show the following results:

Note: sp, ac., m., tr., d., sc., com., dr., mean special subjects academic subjects, manual training, domestic science, commercial subjects, and drawing, respectively.

<sup>1</sup>Indicates that the data submitted are not clear.

Table 11 is to be read as the last 4 columns of table 7.



grade 6—in 2 schools 1 teacher; in 8, 2 teachers; in 7, 3 teachers; in 3, 4 teachers; in 3, 5 teachers; in 3, 6 teachers; in 1, 7 teachers; and in 1, 8 teachers. The median is 3 teachers. Grade 7—in 1 school 2 teachers; in 5, 3 teachers; in 8, 4 teachers; in 5, 5 teachers; in 7, 6 teachers; in 2, 8 teachers. The median is 5 teachers. Grade 8—in 3 schools 2 teachers; in 4, 3 teachers; in 8, 4 teachers; in 5, 5 teachers; in 6, 6 teachers; in 2, 7 teachers; and in 2, 8 teachers. The median is 4.5 teachers. Grade 9—in 9 schools 4 teachers; in 4, 5 teachers; and in 1, 6 teachers. The median is 4 teachers.

The corresponding data from 18 junior high schools show grade medians of 3, 6, 5 and 5 teachers, respectively, as compared with 3, 5, 4.5 and 4 in the departmental schools. These data include teachers of special subjects as drawing, music, domestic science, and manual training, usually from two to three in all, as well as teachers of the traditional common subjects. While the junior schools have a somewhat greater number of teachers per pupil in grades seven and eight, the differences are not so great as to cause any great difference in the degree of departmentalization of teaching. Apparently in the schools of either group the typical pupil has from two to three teachers for the traditional subjects and a like number for special subjects.

Seven schools report 25 or 30 minutes of supervised study daily for each study subject; 1, 20 minutes; 5, 15 minutes; 1, 10 minutes; 5 devote some time daily or twice weekly to some subjects; 1 indicates 1-15 minute study period daily; and 15 say that they do not have supervised study. About one-half these schools have made some definite provision for directed study under the classroom teacher daily, while such practice prevails in 31 of the 35 junior type schools.

Relative to the use of the project plan in prevocational work, 5 schools made no report, 5 indicate that they do not use the method, 7 say "in part", and 18 give an unqualified "yes". This represents essentially the same condition as in the junior type schools where 20 use the project plan, 3 in part, 8 do not, and 4 make no reply.

Our data indicate that in none of these schools is all the academic work of the seventh and eighth grades taught by the regular high school teaching staff, while in the junior type schools high school teachers had charge of all grammar grade work in 18 of the 35 schools. In 9 schools high school teachers are in

charge of special subjects and a part of the academic work; in 17 schools high school teachers are in charge of all or part of the special subjects; in 1 school high school electives only are taught by high school teachers (offered to some eighth grade pupils with the ninth grade); and 8 schools indicate no teachers in common between high school and departmental grades, while in the junior type schools but two schools had no teachers in common between the high school and grammar grades. In more than three-fourths the junior type schools the major part of seventh and eighth grade work is carried by regular high school teachers, while the same is true for not to exceed one-fourth of the departmental schools. The foregoing data indicate far less contact between high school and grammar grades in teaching staff and probable high school methodology in departmental schools than in those of the junior type.

In two of these schools, both in small villages, all the teachers of the seventh and eighth grade classes have had high school teaching experience; in 2, 75% to 80%; in 5, 50% to 74%; in 9, 25% to 49%; in 5, 11% to 20%; in 5, 0% and 7 schools made no reply to the item. The median per cent is 31.5 and the average 37. The schools of the junior type had a median of 100% and an average of 75.5%.

It is apparent that the junior type schools are securing a type of instruction and discipline that probably much more closely approximates the high school type than are the departmental schools, if the employment of teachers of high school experience affords any criterion for judgment.

In conclusion, the departmental grammar schools apparently approximate junior high school standards in degree of departmentalization and in the use of the project method in prevocational work; but in the use of supervised study and teachers of high school experience their procedure is far less likely to achieve junior high school aims and standards of method.

#### (4) DATA RELATIVE TO GUIDANCE AND SOCIAL ORGANIZATION IN DEPARTMENTAL SCHOOLS.

##### *No. of School*

1. Principal acts as pupil adviser. No systematic educational or vocational guidance. Athletic and musical organizations.
2. Pupil advisory system. Incidental educational and vocational guidance. Athletic organization.

3. No advisory system. Definite guidance. Athletic and civic organizations.
4. Advisory plan. No guidance. Athletic organization.
5. No advisory plan. No guidance. No extra-class organizations below grade nine.
6. Room teacher adviser. No definite plan of guidance. Literary, publication, scout, and student government organizations.
7. Advisory plan. Some vocational information. Athletic, musical, and social organizations.
8. Advisory plan. No direct guidance. Athletic, literary, musical, and social organizations.
9. Advisory plan. Guidance thru history of industries. Athletic and musical organizations.
10. No data on advisory plan. No guidance. No data on extra-class organizations.
11. Advisory plan. Guidance thru manual training.
12. Advisory plan. No guidance. Athletic organizations.
13. Advisory plan. Guidance thru community civics. Athletic, civic, musical and social organizations.
14. Advisory plan. No guidance. Athletic and musical organizations.
15. Advisory plan. No guidance. Athletic and musical organizations.
16. Advisory plan. Guidance thru manual training and domestic science. Athletic and musical organizations.
17. No advisory plan. Some guidance by the principal, but not definitely organized. Musical organization.
18. Advisory plan. Some guidance by the manual training teacher.
19. No advisory plan. No guidance. Athletic, civic, musical, publication, and student government organizations.
20. Advisory plan. Guidance thru the principal and thru chapel talks. Athletic and musical organizations.
21. Advisory plan. No guidance. Athletic organizations.
22. Room teacher adviser. No guidance. No extra-class organizations.
23. No data on advisory plan. No guidance. Athletic organizations.
24. Advisory plan. No guidance. No data on extra-class organizations.
25. No advisory plan. No guidance. No data on extra-class organizations.
26. Advisory plan. Incidental guidance. Athletic organizations.
27. No advisory plan. No guidance. No data on extra-class organizations.
28. Advisory plan. No guidance. Athletic and literary organizations.
29. Advisory plan. Incidental guidance. Athletic, civic, and musical organizations.
30. Room teacher adviser. No guidance. Athletic organizations.
31. Advisory plan. No guidance. No data relative to extra-class organizations.
32. Advisory plan. No guidance. No extra-class organizations.
33. No data relative to advisory plan or guidance. Agricultural and athletic organizations.
34. No advisory plan. No guidance. Athletic and musical organizations.
35. No data relative to advisory plan or guidance. Athletic organizations.



Twenty-five schools indicate provision for some form of pupil advisory plan, six report that they have no such provision, and four returned no data. What specific plan is followed is indicated in very few cases. Twenty-one schools report no definite provision for educational or vocational guidance; 7 report "incidental," "not systematic," "manual training and domestic science," etc.; and 5 report "yes", "vocational information," "history of industries," "community civics," and "chapel talks." In two cases no data were reported. With respect to provision for extra-classroom activities in seventh and eighth grades, 7 schools make no response; 3 indicate no such organizations in grades seven and eight; and 25 report 1 or more such organizations, the two of most frequent occurrence being athletics, in 23 schools, and musical clubs, in 13 schools. Civic clubs are reported from 5 schools; literary and social clubs, 3 each; publication and student government, 2 each; agriculture, departmental, and scouts, 1 each. One school reports five different organizations; 3 report four; 2 report three; 10 report two; 9 report one; and 3 report none. The median number is 2 and the average, 1.9.

Twenty-two junior schools report some form of advisory plan as compared with 24 departmental schools, and 8 indicated some definite educational or vocational guidance as compared with 5 departmental schools. Neither group of schools seems to have made very definite provision for pupil advice or guidance. The median number of extra-class organizations is the same for the two types of schools, being 2 in either case, but the average number of organizations per school for the junior type is 2.64 as compared with 1.9 for the departmental schools.

There seems to be very little difference between the junior and departmental schools with respect to the above named features of guidance and social organization.

## (5) SUPPLEMENTARY FEATURES OF PRACTICE IN DEPARTMENTAL SCHOOLS.

TABLE 12.

SUPPLEMENTARY FEATURES OF PRACTICE IN DEPARTMENTAL SCHOOLS.										TEACHER DATA		% MEN	ANNUAL SALARY	CONDITIONS OF ADMISSION
No. of SCHOOL	HOUSING CONDITIONS	No. of WEEKS IN SCHOOL YEAR	No. of MINUTES IN CLASS PERIOD	No. of YEARS TRAINING	No. of YEARS EXPERIENCE	% COLLEGE GRADUATES	% WOMEN	% MEN	ANNUAL SALARY	CONDITIONS OF ADMISSION				
1	(s) vn*	36	40	2.0	10	0	93	7	675	lim.				
2	(s) vn*	36	40	2.1	10	0	50	50	630	lim.				
3	1-12	32	30	1.5	7	0	67	33	520	none				
4	(s) vn*	36	30	3.5	7	67	67	33	760	lim.				
4	(s) vn*	36	40	2.5	6	0	..	..	695	none				
6	(h) (8th)	36	60	2.6	15	66	83	17	720	lim.				
7	(e)	36	30	2.9	9	40	60	40	682	lim.				
8	(h)	36	40	1.9	14	29	71	29	731	lim.				
9	(s)	36	50	2.2	15	0	60	40	666	lim.				
10	(e)	36	60	..	15	..	..	..	785	lim.				
11	3(e)	36	50	2.5	5	0	76	24	706	none				
12	(s)	36	30	2.4	4	0	80	20	630	lim.				
13	(e)	36	30	2.0	17	17	83	17	702	lim.				
14	(e)	38	40	1.3	8	0	63	37	780	lim.				
15	(s)	36	30	1.4	18	0	86	14	668	lim.				
16	7(e)	36	50	2.8	17	33	86	14	..	none				
17	(e)	36	40	2.3	7	27	67	33	720	lim.				
18	(e) vn	36	30	2.0	12	0	92	8	675	lim.				
19	(s)	36	35	1.8	10	10	80	20	585	none				
20	(e)	36	50	1.0	13	0	71	29	701	lim.				
21	(h)	36	30	2.6	15	20	80	20	567	lim.				
22	(h)	32	25	1.0	4	0	80	20	478	.....				
23	1-12	36	25	1.8	9	0	80	20	630	none				
24	(e)	36	50	1.3	10	0	71	29	712	.....				
25	(h)	32	35	2.6	3	25	50	50	580	lim.				

26	(e)	30	1.5	7	0	60	40	540	none
27	(h)	22	2.6	12	25	50	50	...	none
28	1-12	20	2.0	10	0	50	50	634	lim.
29	(e)	25	1.4	..	0	80	20	600	lim.
30	(s)	25	1.5	17	0	60	40	600	none
31	(h)	25	1.5	8	0	86	14	520	lim.
32	(s)	40	2.0	14	0	92	8	693	.....
33	1-12	35	2.0	7	..	71	29	560	.....
34	(e)	30	2.5	9	25	75	25	...	none
35	1-12	22	3.0	12	..	..	..	650	.....

Note: s, e, h, vn, 1-12, 3, 7, \*, lim, 8th, mean respectively, housed separately, with elementary school, with high school, very near high school, grades 1-12 in same building, 3 centers, 7 centers, a few elementary pupils in the building, limited provision, 8th grade only with high school.



Table 12 should be read, departmental school No. 1 is housed in a building separate from the high school and the elementary school, but is very near the high school building and has a few lower grade pupils in the same building; has a 36 week school year and a 40 minute class period; its teachers have on the average 2 years of training beyond the high school course and 10 years of teaching experience, none of its teachers are college graduates, 93% are women and 7% men teachers, the average annual salary is \$675; and very limited provision is made for the admission of over-age pupils regardless of previous scholastic attainments.

In 7 cities or towns the seventh and eighth grades are housed in the high school building, but in 6 of these not in the high school assembly room. In school No. 6 the eighth grade occupies the high school assembly and recitation rooms, has several teachers in common with the high school, and has opportunity to take several high school subjects as electives. In 5 other cities or towns grades 1 to 12 are in the same building; in 6, the seventh and eighth grades occupy a separate building; in 4, mainly separate but in a building having some lower grade pupils; and in 13 they are housed with the first six grades, though often occupying an entire floor of such building. In 23 schools the seventh and eighth grades are separate from the high school, and in 12 they are in the same building. These proportions are the reverse of those among junior high schools where 25 are housed with the high school and 10 are separate from it.

One school has a term of 40 weeks; 1, 38; 27, 36; 1, 34; and 5, 32. The median term is 36 weeks and the average 35.5, which is .8 week longer than in the junior high school group.

Two schools report class periods of 60 minutes (including supervised study); 5, 50 minutes; 7, 40 minutes; 3, 35 minutes; 10, 30 minutes; 5, 25 minutes; 2, 22 minutes; and 1, 20 minutes. The median is 30 minutes and the average, 35.5. For the junior high school group the median is 40 minutes and the average, 41.4 minutes, or the class periods average 8.9 minutes shorter in the departmental schools, although the recitation time is probably about the same, the difference representing additional time given to supervised study in the junior type school.

Thirty-four schools reported data relative to teacher training. In 2 of these schools the average number of years of teacher training beyond the high school is 3 but less than 4 years; in 19,

2 but less than 3 years; and in 13, 1 but less than 2 years. The median by schools is 2.37 years and the average 2.06 years. The median is .59 year less than in the junior group schools, and the average .65 year less. But one-ninth the junior schools have teachers with an average training of less than 2 years, while more than one-third the departmental schools are below this standard.

Of the 34 schools reporting data relative to the term of teaching experience, in 7 the average is 15 or more years; in 12 10 but less than 15 years; in 12, 5 but less than 10 years; and in 3, less than 5 years. The median is 10 years and the average 10.4 years. This is approximately 2 years more than in the junior type schools.

Data from 32 schools relative to the per cent of college graduates among seventh and eighth grade teachers show that 20 schools have none; 3, more than 5% but less than 25%; 7, 25% but less than 50%; 2, 50% but less than 75%; and none more than 75%. The median by schools is 0% and the average, 12%. This is decidedly less than for the junior type schools where the median is 41.5% and the average, 43.1%. Seven-eighths of the junior type schools have 25% or more of their teachers college graduates, while but one-fourth the departmental schools equal this standard.

Thirty-two schools reported data relative to the number of men and women teachers having any classes in any seventh and eighth grade work. None of these have less than 50% women teachers; 4, 50% but less than 60%; 8, 60% but less than 70%; 6, 70% but less than 80%; 11, 80% but less than 90%; and 3, 90% but less than 100%. The median by schools is 75% and the average 74.5%. For men the corresponding figures are 25% and 25.5%. The per cent of women teachers in departmental seventh and eighth grades is materially greater than in the junior type schools, where the corresponding per cents are 60 and 64 for women, and 40 and 36 for men. This difference may be due in part to the large number of very small schools in the junior group, in which the per cent of men teachers is invariably higher than in the larger schools of the same group.

Of the 32 schools reporting data relative to the average annual salaries of teachers, 1 pays less than \$500; 3, \$500 but less than \$550; 4, \$550 but less than \$600; 6, \$600 but less than \$650; 8, \$650 but less than \$700; 7, \$700 but less than \$750; 3, \$750 but

less than \$800; and none over \$800. The median is \$667 and the average, \$650. The corresponding figures for the junior type schools are \$720 and \$735, or the average annual salary paid in the junior type schools is 13% higher than in the departmental schools.

Twelve of the 30 schools reporting on the conditions of admission to the departmental grades, especially grade seven, indicate that promotion from the next lower grade is necessary, but 18 qualify this statement by saying that they are very liberal in promoting over-age pupils who are weak in some subjects, or that the general rule is not adhered to strictly in exceptional cases. However, the number of pupils advanced irregularly without regular promotion seems to be insignificant. In response to the question, "Do you enroll here over-age pupils who have not completed the work of the previous grade because of the greater benefit you think they will receive from this arrangement?" 10 answer "no" and 20 indicate that a few (usually none or very few) pupils are so advanced. Apparently such pupils are advanced from the next lower grade only and are given a conditional promotion even though very weak in their previous work. It is not apparent that the conditions of admission are greatly different from those in the junior type schools. Aside from 4 city schools of the junior type, very, very limited provision is made for the admission of over-age pupils to the seventh grade when deficient in regular academic work, and when so admitted they are generally compelled to carry the regular work of the seventh grade instead of having a special program consisting largely of prevocational work.

#### SUMMARY OF COMPARISONS.

In the seventh and eighth grades the schools of the junior group offer on the average but little more work in the practical arts than do the departmental schools. By state requirement the schools of all types must offer such work 2 periods a week. Many of the departmental schools, however, assign but 30 minute periods to such work, while schools of the junior type have from 40 to 60 minute periods. The junior schools have made marked changes in the time assignment for English and have probably unified the course more and made it somewhat less formal. General science is required or elective in five-sixths the junior high school eighth or ninth grades, while it is offered



to a much more limited extent in departmental schools. The latter schools have introduced special work in community civics more widely than have the junior schools, but such courses have not become the general rule in either type of school as yet. Junior schools offer wider opportunities for eighth grade pupils to elect or carry subjects ordinarily given in the high school than do departmental schools; they also offer additional work in the practical arts more frequently, and they offer work in physical training more often although neither group has made adequate provision for physical education.

Promotion by subject is almost the universal practice in the junior group schools, but not even a majority of the departmental schools have yet adopted the practice.

Frequency of promotion, organization of progress groups, provision for individual advancement, the degree of departmentalization, and the use of the project plan in prevocational work are not peculiarly typical for either group, but supervised study and the employment of teachers in grammar grades with high school teaching experience are far more common in the junior schools. Differences relative to teacher adviser plans and social organization are not marked between schools of the two groups. The junior type schools have more commonly teachers of longer training, more men teachers, and pay somewhat higher salaries.

#### (6) COMPARISON OF JUNIOR AND DEPARTMENTAL SCHOOLS; THRU THE APPLICATION OF REORGANIZATION STANDARDS.

As measured by the most vital standards of the reorganization movement, namely, subject modification, promotion by subject and other provision for individual differences, supervised study and other features of improved method, provision for social organization, and superior training and qualifications for teachers, the junior high school group, as a whole, has advanced farther from traditional practice than has the departmental group. However, it is apparent that some schools claiming junior high school organization are inferior in reorganization to some of the departmental schools. To ascertain the extent to which departmental schools have adopted the reorganization program and may reasonably be classed with the junior type schools, although not claiming the name, I shall arbitrarily apply certain standards that have met very general acceptance among

the so-called junior high schools, and shall attempt a tentative weighting of the different factors employed in order to secure results capable of quantitative measurement. This weighting is, in part, based upon the relative ranking of certain factors by the twenty-five superintendents and, in part, represents merely the opinion of the writer. The standards and their weighting, as I shall subsequently use them, are as follows:

1. Subjects of study modifications for grade eight (total 10).
    - a. English (literature, composition, grammar) 5 periods or less per week, 2 points; 6 to 8 periods inclusive, 1 point.
    - b. Civics, separate course, 2 points; special emphasis as part of the history course, 1 point.
    - c. General science, 2 points.
    - d. One or more high school electives or subjects open to eighth grade pupils, 2 points.
    - e. Practical arts in addition to the state requirement, 1 point.
    - f. Physical training, 1 point.
  2. Provision for different rates of advancement (4 to 7 points).
    - g. Promotion by subject, 3 points; in part, 2 points.
    - h. Provision for individual advancement, 1 point.
    - i. Homogenous groups (cities of 6,000 and more), 1 point.
    - j. Differentiated curricula (cities of 20,000 and more), 2 points.
  3. Factors influencing method (3 points).
    - k. Supervised study, 1 point.
    - l. Project plan in prevocational work, 1 point; in part,  $\frac{1}{2}$  point.
    - m. Twenty-five per cent or more of teachers with high school experience, 1 point.
  4. Social and advisory organizations (3 points).
    - n. Teacher adviser, 1 point.
    - o. Two or more extra-class organizations, 1 point.
    - p. Definite plan of educational or vocational guidance, 1 point.
  5. Miscellaneous features (6 points).
    - q. Term of 36 weeks or more, 1 point.
    - r. Teacher training 2.5 years or more beyond high school, 2 points; 2 years, 1 point.
    - s. Forty per cent or more men teachers, 1 point; 20%,  $\frac{1}{2}$  point.
    - t. Salary of \$700 or more, 1 point; \$600,  $\frac{1}{2}$  point.
    - u. Definite provision for over-age pupils, 1 point; limited,  $\frac{1}{2}$  point.
- The grand total of all points is from 26 to 29.

TABLE 13.  
RATING OF JUNIOR HIGH SCHOOLS BY THE STANDARD ITEMS OF CLASSIFICATION JUST ENUMERATED.

SCHOOL	SCORE BY ITEMS												P	Q	R	S	T	U	TOTAL	BASE	SCORE %				
	A	B	C	D	E	F	G	H	I	J	K	L										M	N	O	
1	2	0	0	2	1	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	21.5	26	82.7
2	2	0	2	2	0	3	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	16.0	24	66.7	
3	1	1	0	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	16.5	27	61.1	
4	2	2	0	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/2	17.5	27	64.8	
5	2	2	0	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	16.5	24	68.8	
6	2	2	0	2	0	3	1	1	1	1	1	1/2	1	1	1	1	1	1	1	1	1/2	15.5	23	67.4	
7	2	2	0	2	1	2	1	1	1	1	1	1/2	1	1	1	1	1	1	1	1	1/2	16.5	26	63.5	
8	2	2	0	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	?	14.0	21	66.7	
9	2	2	0	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	?	15.0	22	68.2	
10	1	1	0	2	0	3	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1/2	24.5	28	87.5	
11	2	2	0	2	1	3	?	1	1	0	1	1	1	1	1	1	1	1	1	1	1/2	16.5	25	58.9	
12	2	1	0	2	1	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	15.5	28	62.0	
13	2	2	2	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/2	27.5	29	91.4	
14	1	1	0	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/2	13.5	24	56.2	
15	2	2	2	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	14.0	23	60.9	
16	2	2	2	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/2	20.5	27	75.9	
17	2	2	2	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/2	16.0	23	69.5	
18	2	2	2	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	11.0	17	64.7	
19	2	2	2	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	18.0	25	72.0	
20	2	2	2	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/2	15.5	24	64.6	
21	2	2	2	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/2	19.0	28	67.9	
22	0	1	0	0	1	0	?	1	0	0	1/2	1	1	1	1	1	1	1	1	1	1/2	7.0	27	25.9	
23	2	1	0	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	19.5	26	75.0	
24	2	1	0	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/2	9.5	26	36.5	
25	2	2	0	2	1	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	25.0	29	86.2	
26	2	2	0	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14.0	21	66.7	
27	2	2	0	2	0	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	18.0	27	66.7	
28	2	2	0	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1/2	21.0	27	77.8	
29	2	2	0	2	0	3	?	1	1	1	1	1	1	1	1	1	1	1	1	1	?	14.0	22	63.6	



TABLE 13—Continued.

SCHOOL	SCORE BY ITEMS																TOTAL	BASE	SCORE %					
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				Q	R	S	T	U
30	2	1	0	0	1	1	3	?	1	0	1	1	?	1	1	1	1	2	$\frac{1}{2}$	1	$\frac{1}{2}$	19.0	27	79.4
31	0	1	0	0	0	0	0	?	0	..	?	1	1	1	1	0	1	0	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	7.5	25	30.0
32	2	0	2	2	0	0	3	1	..	..	1	1	1	1	?	0	0	?	?	?	0	14.0	21	66.7
33	2	1	0	2	1	1	3	?	..	..	1	0	1	1	1	0	1	2	$\frac{1}{2}$	?	$\frac{1}{2}$	18.0	24	75.0
34	2	0	2	2	0	0	3	1	..	..	1	1	1	1	?	0	?	0	2	1	1	17.0	24	70.8
35	2	0	0	0	1	0	3	1	..	..	0	1	1	1	1	1	1	2	1	1	$\frac{1}{2}$	17.5	26	67.3
Median.....																								66.7
Q.....																								4.2
Variability.....																								.063

Note: ? and .. mean, respectively, no data and standard does not apply. The base column indicates perfect score on all points to which standards apply and for which data are given. Total score divided by base column gives the score per cent.

TABLE 14.  
RATING OF DEPARTMENTAL SCHOOLS BY THE STANDARD ITEMS OF CLASSIFICATION JUST ENUMERATED.

SCHOOL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	TOTAL	BASE	SCORE %
1	0	1	0	2	1	0	3	1	1	1	1	1	0	1	1	0	1	1	0	$\frac{1}{2}$	$\frac{1}{2}$	16.0	27	59.3
2	0	1	0	2	0	0	0	1	1	1	1	0	1	1	0	0	1	1	1	$\frac{1}{2}$	$\frac{1}{2}$	9.0	24	37.5
3	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	1	0	2	$\frac{1}{2}$	0	0	4.5	26	17.3
4	0	2	0	0	0	0	0	1	1	1	1	$\frac{1}{2}$	1	0	0	0	1	2	$\frac{1}{2}$	$\frac{1}{2}$	14.0	27	51.8	
5	2	0	0	2	1	0	3	1	0	1	$\frac{1}{2}$	$\frac{1}{2}$	1	1	1	1	1	2	0	0	0	11.0	24	45.3
6	2	2	0	0	0	1	2	0	0	1	$\frac{1}{2}$	$\frac{1}{2}$	1	1	1	0	1	2	1	$\frac{1}{2}$	$\frac{1}{2}$	19.0	26	73.1
7	0	2	0	0	0	0	0	0	1	1	1	$\frac{1}{2}$	1	1	1	1	1	0	$\frac{1}{2}$	$\frac{1}{2}$	14.0	26	53.8	
8	0	2	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	$\frac{1}{2}$	$\frac{1}{2}$	16.0	25	64.0
9	0	2	0	0	0	1	3	1	1	1	1	1	1	1	1	1	1	1	1	$\frac{1}{2}$	$\frac{1}{2}$	11.5	20	57.5
10	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0	1	2	$\frac{1}{2}$	0	0	9.5	24	39.6
11	0	0	0	2	0	0	0	1	1	1	0	1	0	1	1	0	1	1	$\frac{1}{2}$	$\frac{1}{2}$	0	7.5	26	28.8
12	1	1	0	0	0	0	0	1	1	0	0	1	0	1	1	1	1	0	0	$\frac{1}{2}$	$\frac{1}{2}$	17.5	29	60.3
13	0	2	0	2	1	0	3	1	1	1	1	1	0	1	1	1	1	0	0	$\frac{1}{2}$	$\frac{1}{2}$	16.0	27	59.3
14	0	2	0	0	0	0	0	1	1	0	1	1	0	1	1	0	1	0	$\frac{1}{2}$	$\frac{1}{2}$	7.0	25	28.0	
15	0	2	0	0	0	0	0	1	1	0	1	1	0	1	1	0	1	2	0	$\frac{1}{2}$	0	9.0	25	36.0
16	0	2	0	0	0	0	0	1	1	0	1	0	1	1	1	0	1	1	$\frac{1}{2}$	0	0	14.0	28	50.0
17	0	0	0	2	1	1	3	1	1	0	0	$\frac{1}{2}$	0	0	0	0	1	1	0	$\frac{1}{2}$	$\frac{1}{2}$	10.0	23	43.9
18	0	2	0	0	0	0	0	1	1	1	1	0	0	0	1	1	1	0	$\frac{1}{2}$	0	0	11.0	27	40.7
19	0	2	0	2	0	0	3	1	0	1	0	0	0	0	1	1	1	2	$\frac{1}{2}$	$\frac{1}{2}$	12.0	26	46.2	
20	0	1	0	0	1	0	0	0	1	1	1	1	0	1	0	0	1	0	0	$\frac{1}{2}$	$\frac{1}{2}$	11.5	25	46.0
21	0	0	0	2	1	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	6.5	25	26.0
22	0	0	0	0	1	0	0	0	1	1	1	1	1	1	0	0	0	0	$\frac{1}{2}$	0	0	10.5	24	43.8
23	0	2	0	0	1	1	0	1	1	1	$\frac{1}{2}$	1	0	1	0	0	1	0	$\frac{1}{2}$	0	0	8.5	24	35.4
24	0	2	0	0	0	0	0	1	1	1	$\frac{1}{2}$	1	0	1	0	0	0	0	0	0	$\frac{1}{2}$	6.5	23	28.3
25	1	0	0	0	0	0	0	1	1	1	0	1	1	0	0	0	1	1	1	0	0	4.0	23	17.4
26	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	1	1	0	0	10.0	23	43.5
27	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	1	1	$\frac{1}{2}$	$\frac{1}{2}$	8.0	26	30.8
28	0	1	0	0	0	0	0	1	1	1	$\frac{1}{2}$	1	1	1	1	0	1	0	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	13.0	24	54.2
29	2	2	2	0	0	0	0	1	1	1	$\frac{1}{2}$	1	1	1	1	0	1	0	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$			

TABLE 14—Continued.

SCHOOL	SCORE BY ITEMS																TOTAL	BASE	SCORE %						
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				Q	R	S	T	U	
30	2	1	0	2	0	1	0	?	1	..	0	1/2	?	1	0	0	1	0	1	1/2	0	11.0	25	44.0	
31	0	0	0	0	0	1	0	?	..	..	0	1/2	?	1	?	0	1	0	0	0	1/2	?	4.0	23	17.4
32	2	0	0	0	0	0	0	0	0	..	1	1/2	?	1	0	0	1	1	0	1/2	?	7.0	25	28.0	
33	0	1	0	0	1	0	0	0	..	..	0	0	1	?	1	?	0	1	1/2	0	?	5.5	23	23.9	
34	0	1	0	0	1	0	0	?	0	..	1/2	1	1	0	1	0	1	2	1/2	?	0	9.0	25	36.0	
35	0	0	0	0	1	0	0	1	..	..	0	1	1	?	0	?	0	2	?	1/2	?	6.5	22	29.5	
Median.....																									40.7
Q.....																									11.5
Variability.....																									.29

Note: ? and .. mean, respectively, no data and standard does not apply. The base column indicates perfect score on all points to which standards apply and for which data are given. Total score divided by base column gives the score per cent.



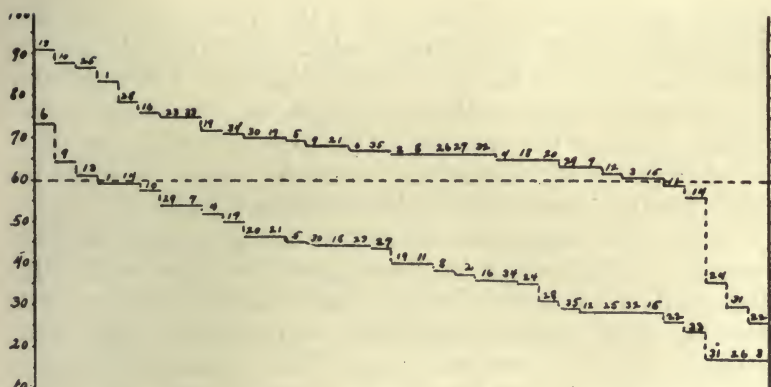


CHART 1.

Scoring of junior and departmental schools, based on tables 13 and 14.

Upper graph, junior schools, lower graph, departmental schools.

Numbers on left margin, score.

Numbers above graph lines, schools as given in tables.

Tables 13 and 14 represent the results of the scoring of the 35 junior high schools and the 35 departmental schools on the basis of the above named factors. Four of the junior type schools score 80% or more; 7, 70% to 79%; 19, 60% to 69%; 2, 50% to 59%; and 3 below 40%. Tentatively it will be assumed that any school scoring below 60% should not be classed as meeting junior high school standards. By the same standards no departmental school scores 80% or more; 1, 70% to 79%; 2, 60% to 69%; 7, 50% to 59%; 8, 40% to 49% and 17, below 40%.

From this comparison it appears that but 3 of the departmental schools (all in cities of 5,000 or more population) surpass the lowest 5 of the junior type schools in the features of organization just enumerated, although 3 other schools are close to the arbitrarily chosen border line, and with slight modifications in their present organization could qualify by these standards. Twenty-seven of the junior schools surpass all but one of the departmental schools, and 32, all but 6. The amount of overlapping of the two types of schools is not as great as is generally assumed, which seems to indicate that the adoption of the junior high school name carries with it certain standards of reorganization which other departmental schools are unconscious of, or at least, are not attaining.

The fact that the junior high school group have a "Q" of but 4.2 as compared with 11.5 for the departmental schools, indicates a much closer grouping of the junior high schools about their

central tendency than is the case in the departmental schools. The contrast is still more marked when each "Q" is divided by its median to obtain the per cent of variability. The variability for the junior type schools is .063 while that for departmental schools is .29, or the departmental schools are nearly five times as variable among themselves as are the junior schools with respect to the features upon which the rating is based.

This entire comparison is based on the assumption that my standards and the weighting I have given them are valid. Also this method of scoring leaves out of account fundamental features of all school organization and considers only those features stressed in reorganization. Thus the score given is not to be considered as a total efficiency score, but as a sum to be added to a common fundamental score for achieving superior excellence along certain desirable lines. My choice of 60% as a dividing line between junior and departmental schools is based on the distribution of schools of the junior type, there being approximately as many of these below 60% as above 80%, and I have assumed that the number of schools possessing a decidedly inferior organization should be approximately equal to the number possessing a superior organization, above 80%.

Many conscientious objectors to the junior high school name and program raise the question, "Why adopt a new name and make such ado about nothing when departmental schools everywhere are achieving the same results?" Are they achieving the same results? The foregoing comparisons do not indicate that they are. The value, then, of the new name lies in the new spirit created whereby the administrator can more easily secure the introduction of new subjects, new and better equipment, better teachers, new features of method and social organization under the new than under the old name and organization. An enthusiasm and interest is created among pupils, teachers and patrons under the new name that is largely impossible under the old. The situation has in it many of the elements making for success in new resolutions, conversions, and fads generally; tradition having been broken with, new types of activity and administration can much more easily be introduced and supported. Johnston<sup>2</sup> has happily characterized the situation in his statement, "It (the junior high school) has somehow fired our educational imagination," which statement seems to explain much of the force and success of the new and rapidly growing reorganization movement.

<sup>2</sup> Johnston, C. H. "The Junior High School." Ed. Adm. & Sup. 2:424.

## 2. SPECIFIC MEASUREMENT OF CERTAIN CLAIMED ADVANTAGES OR OBJECTIONS TO JUNIOR HIGH SCHOOL ORGANIZATION.

### a. *Junior High School Costs.*

One of the chief objections that has been advanced against the reorganization movement has been its greater cost. At the present time common opinion seems to take higher costs for granted in the junior type school than in the traditional grammar grades. Francis<sup>1</sup> states that the junior high school cost should be about midway between that of the first six grades and of the senior high school. Phillips and Barnes<sup>2</sup> state that replies to their inquiry indicate that a six year high school organization may be expected to cost from 10% to 15% more than the usual two year grammar grades plus a four year high school plan. Briggs<sup>3</sup> had only 30 out of 157 schools reply relative to costs, but 17 stated that the junior high school cost more than in the first six grades, 6 about the same, and the remaining 7 gave qualified answers. Rundlett<sup>4</sup> gives the cost under the old organization in 1909-10 as \$33.14 per pupil in grammar grades and as \$29.28 and \$28.09, respectively in 1910-11 and 1911-12 under the new organization. He also indicates that the average of class scholarship marks was raised under the new plan and that 33% more work was covered in Latin, history, and mathematics in junior high school grades. Bachman,<sup>5</sup> in the New York City Survey, shows that in 1911-12 the intermediate school organization of seventh and eighth grades in New York City was costing less than the regular grammar grade organization, largely due to a more economic use of rooms and equipment under the former type of organization. But it is to be noted that the New York intermediate schools were not offering the widely enriched and differentiated curricula which are associated with this type of school in our larger cities, nor were they employing teachers approximating high school standards of training. A recent investigation by Briggs,<sup>6</sup> not yet published, shows some schools paying less per capita for maintenance and operation in the junior high school than in the first six grades and in other cities the costs are more than for the senior high school.

<sup>1</sup> Francis, J. H. "Needed Reorganizations." The Portland, Ore., School Survey, p. 191.

<sup>2</sup> Phillips, E. M. and Barnes, C. H. The Junior High School Problem. Bulletin No. 59, 1916 Minn. Department of Public Instruction.

<sup>3</sup> Briggs, T. H. The Junior High School. Report U. S. Commissioner of Ed. 1914, vol. I. p. 135-157.

<sup>4</sup> Rundlett, Concord, N. H., School Reports, 1909 to 1912.

<sup>5</sup> Bachman, F. P. Report of Com. on School Inquiry, N. Y. City. Vol. I, pp. 146-148. 1913.

<sup>6</sup> Briggs, T. H. The Junior High School (an investigation inaugurated in 1917 and not yet published).



This great variation in costs may be due to several causes, many of which are discussed later in this section. Costs will be low where teachers are employed with qualifications for elementary school teaching only, where the traditional type of principal is employed who does no supervising, where large classes are the rule, where traditional rather than laboratory and shop subjects and methods prevail, where meager equipment is used, and where cheaply constructed buildings are utilized. In a few instances the junior high school costs were more than in the senior high school because of new and more costly and better equipped buildings, and because of the introduction of more shop and laboratory work with special teachers in the junior high school, while maintaining largely the traditional text book courses in the senior high school.

In all the investigations the cost data have been very meager, chiefly because school officials do not keep their financial records in such form that they can easily determine cost factors.

#### COST DATA FOR INDIANA SCHOOLS

What do junior high school organizations cost in Indiana as compared with the usual eight-four type?

A preliminary inquiry revealed the fact that I should be unable to secure data from most schools relative to detailed analyses of maintenance and operation other than the cost of instruction and supervision which could be rather easily checked from the salary list. Accordingly I have limited my cost statistics to this phase of the problem.

My inquiry forms called for the total annual salary account for teachers, principals and supervisors for grades 1 to 6, 7 and 8, and 9 to 12, separately, the salary of each individual to be distributed among these three groups according to the time spent by the teacher or supervisor in each of these grade groups. As the majority of schools failed to report their average attendance, I have used the total enrollment up to and including March for the second semester as the base for computing the cost per pupil. While the data will not be readily comparable with those of other investigations, the method seems to be a valid one for comparing schools within this study. The cost per pupil for grades 1 to 6 means the total salary account for teaching and supervision charged against all these grades divided by the total enrollment for these grades. Per capita costs for the grammar grade and high school units are similarly computed.

TABLE 15.  
COST PER PUPIL FOR INSTRUCTION AND SUPERVISION

CITY	JUNIOR HIGH SCHOOLS			DEPARTMENTAL SCHOOLS			NON-DEPARTMENTAL SCHOOLS		
	1-6	7-8	9-12	1-6	7-8	9-12	1-6	7-8	9-12
1	19.00	41.50	41.50	.....	34.90	.....	13.60	23.40	28.10
2	16.70	18.00	34.20	.....	19.20	.....	14.30	27.30	52.60
3	15.40	29.70	35.00	.....	29.20	42.20	.....	.....	.....
4	21.80	52.60	52.60	14.70	26.60	34.30	23.20	18.70	58.90
5	.....	49.40	49.40	20.80	25.20	48.60	12.00	27.70	46.10
6	22.90	23.70	43.60	15.70	24.50	43.50	17.00	15.70	37.90
7	18.30	43.20	43.20	20.20	30.90	46.50	16.60	23.50	37.30
8	.....	53.70	78.60	17.40	25.50	.....	14.60	19.20	24.00
9	27.90	.....	.....	17.00	26.10	38.10	12.50	17.30	41.90
10	.....	.....	.....	22.80	24.00	.....	18.60	29.10	39.90
11	.....	.....	.....	18.60	19.10	43.00	12.50	46.70	.....
12	.....	.....	.....	14.20	25.90	48.20	.....	.....	.....
13	.....	.....	.....	20.90	26.10	24.30	.....	.....	.....
14	11.50	31.90	45.50	24.70	28.20	30.90	19.60	24.90	36.70
15	14.90	65.50	65.50	.....	.....	.....	15.90	33.30	95.20
16	15.70	28.10	28.10	.....	.....	.....	.....	22.40	39.20
17	31.00	53.10	53.10	.....	33.70	.....	.....	29.80	37.30
18	.....	.....	.....	.....	.....	.....	13.80	17.60	41.10
19	17.60	42.20	42.20	11.40	21.10	33.70	14.40	15.20	92.60
20	14.60	21.50	33.80	17.60	28.80	35.10	23.80	35.80	51.40
21	32.40	36.90	36.90	16.90	17.60	35.00	15.70	30.40	40.00
22	.....	57.00	.....	.....	.....	.....	15.90	26.10	38.60
23	12.20	19.60	32.10	16.90	23.50	37.20	.....	.....	.....
24	14.10	17.10	37.10	.....	14.50	.....	.....	.....	.....
25	.....	52.80	.....	11.10	41.60	41.60	.....	.....	.....
26	.....	.....	.....	15.10	31.90	46.80	.....	.....	.....
27	.....	.....	.....	12.30	18.30	42.10	.....	.....	.....
28	.....	.....	.....	20.50	20.50	27.90	.....	.....	.....

TABLE 15—Continued

CITY	JUNIOR HIGH SCHOOLS			DEPARTMENTAL SCHOOLS			NON-DEPARTMENTAL SCHOOLS		
	1-6	7-8	9-12	1-6	7-8	9-12	1-6	7-8	9-12
29	.....	.....	.....	7.20	30.00	34.80			
30	13.10	13.10	37.40	.....	.....	.....			
31	13.60	27.00	28.30	.....	22.10	28.40			
32	.....	.....	.....	14.90	25.90	48.10			
33	20.60	21.10	48.70	28.00	29.00	46.00			
34	.....	41.00	41.00	.....	.....	.....			
35	.....	20.00	.....	29.10	29.10	56.10			
Average....	18.60	35.82	43.23	17.74	25.97	41.24	15.70	25.48	46.60
Median....	16.70	34.40	41.50	17.00	25.90	41.85	15.15	24.90	40.55
Q.....	4.05	15.75	7.41	3.10	3.91	6.30	2.37	5.76	9.08
High.....	32.40	65.50	78.60	29.10	41.60	57.50	23.80	46.70	24.00
Low.....	11.50	13.10	28.10	7.20	14.50	24.30	7.80	15.20	28.10
No.....	19	24	21	23	29	24	18	19	18

Note: Schools 2, 5, 6, 8, 15, 16, 17, 19 are six-six type schools with a common teaching staff for grades 7 to 12. School 30 is a six-three type school with grades 7 and 8 reported with grades 1 to 6. In school 21 the 8th grade only is included with the high school, a 7-5 type school.



TABLE 16.

COST LIMITS	JR. HIGH SCHOOL			DEPT. SCHOOL			NON-DEP. SCHOOL		
	1-6	GRADE 7-8	9-12	1-6	GRADE 7-8	9-12	1-6	GRADE 7-8	9-12
6 to 10.....				1			1		
11 to 15.....	9	1		8	1		11	2	
16 to 20.....	5	4		10	5		4	4	
21 to 25.....	2	3		2	9	1	2	4	
26 to 30.....	1	3	2	2	10	3		6	1
31 to 35.....	2	1	4		3	5		2	
36 to 40.....		1	3			2			8
41 to 45.....		4	6		1	5			2
46 to 50.....		1	2			6		1	1
51 to 55.....		4	2						2
56 to 60.....		1				2			1
Over 60.....		1	2						3
No. cases.....	19	24	21	23	29	24	18	19	18

TABLE 17.

## COST PER PUPIL FOR INSTRUCTION AND SUPERVISION IN CITIES OF 5,000 AND MORE POPULATION.\*

CITY	JUNIOR HIGH SCHOOLS			CITY	DEPARTMENTAL SCHOOLS		
	1-6	GRADE 7-8	9-12		1-6	GRADE 7-8	9-12
3	16.70	18.00	34.20	1	.....	34.90	.....
4	15.40	29.70	35.00	2	.....	19.20	.....
7	22.90	23.60	43.60	4	14.70	26.60	34.30
10	27.90	53.70	78.60	6	15.70	24.50	43.50
16	15.70	28.10	28.10	9	17.00	26.10	38.10
20	14.60	21.50	33.80	11	22.80	24.00	43.40
21	32.40	36.90	36.90	12	18.60	19.10	48.20
22	.....	57.00	.....	13	14.20	25.90	24.30
24	14.10	17.10	37.10	14	20.90	26.10	57.50
25	.....	52.80	.....	15	24.70	28.20	30.90
30	13.10	13.10	37.40	17	.....	33.70	.....
31	13.60	27.00	28.30	19	11.40	21.10	33.70
				20	17.60	28.80	35.10
				24	.....	14.50	.....
				32	14.90	25.90	48.10
No.....	10	12	10	11	15	11	
Average..	18.64	31.54	39.30	17.50	25.24*	39.74	
Median..	15.55	27.55	35.95	17.60	25.90	38.10	
Q.....	5.77	17.40	4.73	3.39	3.86	7.56	
High....	32.40	57.00	78.60	24.70	34.90	57.50	
Low....	13.10	13.10	28.10	11.40	14.50	24.30	

\* Note: All non-departmental schools are in cities of less than 5,000 population. See table 15.

TABLE 18.

## COST OF INSTRUCTION AND SUPERVISION PER PUPIL IN CITIES OF LESS THAN 5,000 POPULATION.

CITY	JUNIOR HIGH SCHOOLS			CITY	DEPARTMENTAL SCHOOLS		
	1-6	GRADE 7-8	9-12		1-6	GRADE 7-8	9-12
2	19.00	41.50	41.50	3	.....	29.20	42.20
5	21.80	52.60	52.60	5	20.80	25.20	48.60
6	.....	49.40	49.40	7	20.20	30.90	46.50
8	18.30	43.20	43.20	8	17.40	25.50	.....
14	11.50	31.90	45.50	21	16.90	17.60	35.00
15	14.90	65.50	65.50	23	16.90	23.50	37.20
17	31.00	53.10	53.10	25	11.10	41.60	41.60
19	17.60	42.20	42.20	26	15.10	31.90	46.80
23	12.20	19.60	32.10	27	12.30	18.30	42.10
33	20.60	21.10	48.70	28	20.50	20.50	27.90
34	.....	41.00	41.00	29	7.20	30.00	34.80
35	.....	20.00	.....	31	.....	22.10	28.40
				33	28.00	29.00	46.00
				35	29.10	29.10	56.10

No.....	9	12	11	12	14	13
Average..	18.43	40.09	46.80	17.96	26.74	41.02
Median..	18.30	41.85	45.50	17.15	27.75	42.10
Q.....	4.31	15.75	5.72	4.25	4.58	5.94
High....	31.00	65.50	65.50	29.10	41.60	56.10
Low....	11.50	19.60	32.10	7.20	17.60	27.90

Note: For non-departmental schools see table 15.

TABLE 19.

## COST OF INSTRUCTION AND SUPERVISION PER PUPIL IN CONSOLIDATED SCHOOLS

CITY	JUNIOR HIGH SCHOOLS			CITY	NON-JUNIOR SCHOOLS		
	1-6	GRADE 7-8	9-12		1-6	GRADE 7-8	9-12
2	19.00	41.50	41.50	2	14.30	27.30	52.60
5	21.80	52.60	52.60	8	14.60	19.20	124.00
6	.....	49.40	49.40	9	12.50	17.30	41.90
8	18.30	43.20	43.20	15	15.90	33.30	95.20
15	14.90	65.50	65.50	20	23.80	35.80	51.40
17	31.00	53.10	53.10	21	15.70	30.40	40.00
19	17.60	42.20	42.20	33*	28.00	29.00	46.00
34	.....	41.00	41.00	35*	29.10	29.10	56.10

No.....	7	8	8	8	8	8
Average..	17.51	48.56	48.56	19.24	27.68	63.40
Median..	19.00	46.30	46.30	15.80	29.05	52.00
Q.....	3.66	5.80	5.80	6.85	7.05	26.65
High....	31.00	65.50	65.50	29.10	35.80	124.00
Low....	14.90	41.00	41.00	12.50	17.30	40.00

\* Note: These two schools are from the departmental list; the remaining six are from the non-departmental list.

Tables 17, 18, and 19 are to be read the same as table 15.

Tables 15 to 19 set forth the data for the cost of instruction and supervision for such schools as reported both cost and enrollment data, about two-thirds the whole number participating in the investigation. The schools have been divided into three groups for comparison, junior high schools, departmental schools, and non-departmental schools, all the latter having, however, a measure of departmental teaching in special subjects.

Table 15 should be read: Instruction and supervision costs school number 2 of the junior high school group \$19 per pupil in the first six grades, \$41.50 in the seventh and eighth grades, and \$41.50 in grades nine to twelve inclusive (a 6-6 school with grades 7 to 12 under the same teaching staff). School number 2 of the departmental group makes no report for the first six grades or grades nine to twelve, but has a per capita cost of \$19.20 in grades seven and eight, etc.

Because of the wide variation of a few schools the median cost would seem to be a better measure of central tendency in this instance than the average, although I have computed the latter also. The median will be used in the following discussions unless otherwise indicated.

From table 15 it appears that the median cost per pupil for the first six grades is for the junior high school group \$16.70; for the departmental group, \$17.00; and for the non-departmental group, \$15.15 a year. For grades seven and eight the corresponding costs are \$34.40, \$25.90 and \$24.90 respectively; while for grades nine to twelve they are \$41.50, \$41.85, and \$40.55 respectively. The only marked variation between the three groups is in grades seven and eight where the junior high school type costs 33% more than in the departmental schools. The ratio between high and low for any one grade group varies from two and one-third to one for the high school costs of the departmental schools to five to one for the seventh and eighth grade costs in the junior high school group. A "Q" of 15.75, or nearly one-half its median, for costs in grades seven and eight of the junior high schools indicates a uniformly wide deviation from the central tendency for these schools. "Q" represents the difference between the first and third quartile points of the distribution divided by two, or it is approximately the distance we must go either side the central tendency to include the middle 50% of our distribution.



Table 16 represents a distribution of the number of schools of each group for each \$5 unit of cost from \$5 up to \$60 and more, and should be read: In the junior high school group in the first six grades nine schools have a cost per pupil of \$11 to \$15 inclusive; 5 schools, \$16 to \$20 inclusive, etc.

Table 15 does not enable us to get at a close analysis of the cost conditions, for we have here represented schools in cities of 35,000 population and others located at a country cross-roads three miles from any village, and the costs due to different causes, as size of school or differentiated curricula, combine so as to give unsatisfactory comparisons due to the non-homogenous grouping of the schools to be compared. To make these comparisons more significant I have retabulated the data of table 15, showing in table 17 costs in schools in cities of 5,000 or more population, and in table 18 costs in schools in towns and villages of less than 5,000 population.

This should yield more satisfactory comparisons, for schools relatively alike in size and other conditions are grouped together.

Table 17, median results, shows that for schools in cities of 5,000 and more population the pupil cost is higher in both the first six grades and in the high school in the departmental group, \$17.60 and \$38.10 respectively as compared with \$15.55 and \$35.95 in the junior type schools, and that the difference in costs for grades seven and eight is \$1.65 per pupil, or 6% higher for the junior group. The deviation or "Q" for grades seven and eight of the junior type schools is very high, 17.4, which indicates lack of standardization in costs here as compared with costs in the grammar grades of other type schools. So far as concerns instruction and supervision only the junior type school does not appear to add very materially to the cost per pupil of the usual departmental school for cities of this size, and the added cost per pupil in grades seven and eight is more than offset by the lower high school costs in the junior type schools.

Table 18 shows a slightly higher cost for the junior high school type in both the first six grades and in the high school, and a decidedly higher cost, 50.8% higher, in grades seven and eight in the schools of less than 5,000 population, as measured by group medians. This is no doubt to be explained by the fact that in the seventh and eighth grades of the junior type schools all the teachers from grades seven to twelve are regular high school teachers and receive high school salaries, and that prin-

cipals and special teachers devote more time to these grades in this type of school, and especially that these small junior high schools are the smallest schools on my list, far too small for economic class grouping. If average costs be compared the relative standing of the two types of schools remains unchanged. Again the variability or deviation in the grammar grade costs of the junior type schools is high, amounting to approximately 40% of the average cost. The cost for the various grade groups in the non-departmental schools (table 15) is slightly lower in each case than for the corresponding unit in the departmental schools (table 18).

As eight of the small schools of the junior high school group are of the consolidated rural type, I have selected for comparison eight other consolidated schools, all I have data on, from the departmental and non-departmental groups. Table 19 shows the costs for these schools. The seventh and eighth grade costs are, for the junior schools, \$46.30 and, for the non-junior schools \$29.05. Again the junior type school costs more in the first six grades, \$19 as compared with \$15.80 in non-junior schools (due to very small enrollments), 59% more in grades seven and eight (partly due to small enrollments in these junior type schools), but 11% less in the senior high school grades, in spite of the fact that these junior type schools have a much smaller average enrollment than have the others. If averages be used the non-junior type schools have still higher costs in grades nine to twelve inclusive.

This suggests that these results are not to be taken at their face value in ascertaining the real cost conditions, but rather there should be an investigation of the costs covering the entire six upper grades in both groups of schools. It is the total cost of the school system that the taxpayer is concerned with, and any plan of grouping whereby one department may be made to have a low per capita cost does not relieve the situation if some other department is thereby made more expensive. It may be that our high cost in grades seven and eight in the junior type schools is fully counterbalanced by lower costs in the senior high school, due to a more economic use of the staff in the six-six type school.

Eight schools of the six-six type and eight of the eight-four type, indicated in table 19, reported complete cost and enrollment data for grades seven to twelve inclusive. The average enrollment

for grades seven to twelve in the junior type schools is 70, and the average annual cost of instruction, \$3250. For the eight non-junior schools of the consolidated group the corresponding figures are, average enrollment, 96, and average annual cost \$4180. From this we get a per capita cost for grades seven to twelve of \$46.43 for the junior type schools and \$43.54 for the same grades in the non-junior schools. The 6% higher cost in the junior type schools is probably more than accounted for by their smaller enrollment, which is far below the economic efficiency point, and they also have as advantages for the extra outlay a teaching force with a higher average amount of training and a somewhat richer curriculum offering. From these facts it appears that a junior high school type of organization can be maintained in the small consolidated school at approximately the same cost as is required for the eight-four plan; that high costs are not primarily due to the "junior" feature of the organization but rather to the "small" factor.

From data in my possession I have estimated that these eight junior high schools of the consolidated type could return to the eight-four plan by dismissing one high school teacher and employing an additional elementary school teacher at a saving of \$160 a year for the entire six upper grades, and that the seventh and eighth grade costs would then be \$18.33 per pupil per year and the high school costs \$63.50 per pupil. If we consider grades seven and eight only our present cost of \$46.30 per pupil is 153% more than it would be under the stated conditions of the eight-four plan with a seventh and eighth grade cost of \$18.33. This seems to be an enormous difference, but if we include the high school with the seventh and eighth grades the present total cost of \$3250 is only 5% more than it would be after effecting a saving of \$160. The apparently great saving in grades seven and eight would be nearly offset by the increased cost in grades nine to twelve, due to a less economic utilization of the high school teaching staff with a smaller number of pupils.

Under the non-junior plan seventh and eighth grade pupils in rural consolidated schools are receiving these advantages: non-departmental teaching for the most part, promotion by grade, no supervised study, no men teachers or a man teacher two periods a week in manual training or agriculture only, an elementary school type of discipline, little or no participation in high school athletics and social activities, teachers with from



one to two years of normal or college training, a course of study and methods based largely upon a deadening repetition of what has already been explored (arithmetic 5 periods a week, history 5, geography-physiology 5 or more periods, formal English 10 to 15, manual or household arts or agriculture 2, drawing 1, and music 1), and a non-stimulating elementary school atmosphere.

Under their present junior type of organization they have these advantages: departmental teaching, promotion by subject supervised study, 40% men teachers in certain subjects, both vocational and academic, a high school type of discipline, participation in high school athletics and social activities, teachers with an average of more than three years of college and normal training, a course of study designed for a wider exploration of pupil interests and fields of knowledge (arithmetic 4 periods a week, history 4, general science 4, revised English 4, German 4, household or manual arts or agriculture 2, drawing 1, music 1), and the spirit and stimulus of a high school atmosphere.

CHART 2.

Per capita cost of instruction and supervision, based on tables 17, 18 and 19.

"a" schools in cities of 5,000 and more.

"b" schools in cities less than 5,000.

"c" consolidated rural schools.

Numbers in left margin, cost in dollars.

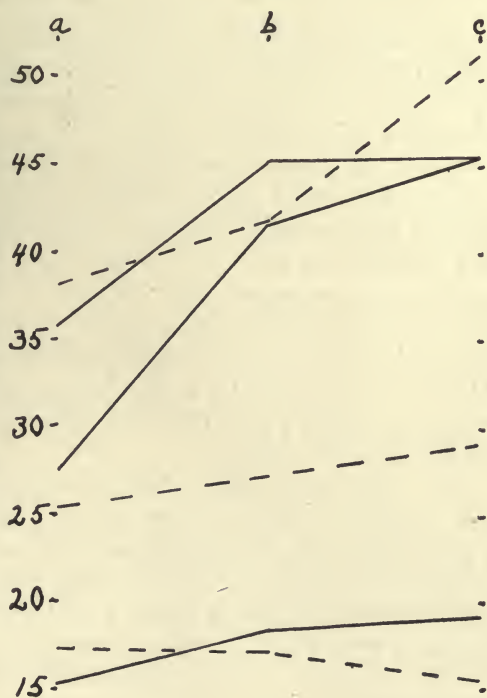
— junior schools.

- - - departmental or non-junior schools.

Upper pair of lines, high school costs.

Middle pair of lines, 7th and 8th grade costs.

Lower pair of lines, costs in grades 1 to 6.



The present junior-senior type of organization in consolidated schools costs \$2.29 per pupil more than it would for the same grades under the old eight-four plan (a saving of \$160 divided by 70, the number of pupils in the average six year high school). The question for the school authorities to decide is, is it worth the increased outlay to secure these advantages? From the foregoing analyses it appears that in both the larger city and the smaller consolidated schools, considered separately, the junior-senior high school cost does not exceed the eight-four plan cost for the upper six grades by more than 6%, and it is probable that the compensating advantages more than offset the additional outlay. For village and small city junior schools the per capita cost for the upper six grades is approximately 15% to 20% more than for departmental schools.

## FURTHER ANALYSIS OF COST FACTORS.

### 1. FACTORS WHICH TEND TO INCREASE COSTS.

#### a. *Teacher Conditions.*

(1) The reorganized school has teachers of superior training. Even in those schools where teachers of high school qualifications are not employed in the junior high school, the best of the elementary teachers are chosen. Data presented in another section of this study show that on the average junior high school teachers have had approximately six-tenths of a year more training than teachers in grades seven and eight in non-junior high schools, and that 43% of them on the average are college graduates as compared with 12% for the seventh and eighth grades in the usual grammar school of the departmental type. Necessarily this superior training will result in higher salaries. My data show that junior high school teachers receive on the average \$85 more a year than do teachers in the grammar grades of departmental schools.

(2) The junior high school has more men teachers. Our data relative to teachers show that in the median school 40% of junior high school teachers are men as compared with 25% in the grammar grades of the non-junior type school. The average salary of men teachers in Indiana high schools is at least \$100 a year more than that of women teachers, and the use of more men teachers in grammar grade instruction will increase costs proportionately.

(3) The junior high school, especially in the larger schools, has more teachers and supervisors of special subjects, which in large part constitute the differentiated curricula.

Well trained teachers in vocational and special subjects command higher salaries as a rule than do teachers of academic high school subjects, and especially do these special teachers, who are members of the high school teaching staff, except in a very few of our Indiana schools, receive salaries decidedly in advance of the salaries paid to grammar grade teachers of reading, arithmetic and the like.

*b. Conditions arising out of varied and enriched subjects of study and differentiated curricula.*

(1) Any increase in the number of subjects taught in the school will call for an enlarged teaching staff and an increased salary budget.

A comparison of the number of teachers in the small Indiana high schools now and ten years ago will reveal the fact that four or six teachers are now employed where formerly there were two and three only, and this in schools having not to exceed an enrollment of 50 or 60 pupils. The number of subjects has been increased and the ratio of teachers to pupils has markedly increased, thus adding to the cost per pupil.

(2) Every differentiation tends to divide the student population into more groups, and this, except in the larger schools, will result in decreasing the size of classes and in increasing the per capita costs.

For example, a small school may have 30 pupils in the eighth grade. In arithmetic and the other common subjects they constitute one class group, but in the practical arts they divide into two groups and inevitably the cost is increased. To make my point clearer, I shall cite an illustration from a previous study I have made relative to high school costs.<sup>7</sup> In each of two different schools the drawing teacher receives an annual salary of \$810, but in school "a" the average class size in drawing is 9.5 pupils and in school "b" 35 pupils, with equal credit allowed per hour of work and with equal teaching time for the two teachers. The cost per credit in school "a" is \$10.65 while in "b" it is but \$2.88. All conditions except class size are the same. Funda-

<sup>7</sup> Childs, H. G. "Cost of Instruction in Indiana High Schools." Bul. of Third Annual Conference on Educational Measurements, Indiana University, 1917. p. 133.



mentally, class size is the most important factor in cost production in instruction. In the larger schools having several sections for each grade, the boys and girls from two ordinary sections can be grouped for work in practical arts and thus keep all classes of approximately standard size, but this is impossible in the small school and is seldom done in the larger.

(3) The practical arts subjects, which are being much stressed in junior high schools, are commonly assigned double the time of the academic subjects for the same credit. This is universal in high school practice.

With double time given to such class groups teachers can teach but half as many different classes during the day as in academic subjects, and hence the cost of instruction is increased. My study of instructional costs, just referred to, shows (page 137) that in the median size high schools manual and household arts instruction cost \$7.10 and \$7.23 respectively per credit, while history and mathematics cost but \$3.15 and \$3.51 respectively. As the salaries of the two groups of teachers were about the same, the double costs are clearly due to a combination of smaller classes and double time for the practical arts group.

(4) It is customary to have smaller class groups in special and vocational subjects than in academic subjects, even in the larger schools, and this still further adds to the cost.

Reference to my study just cited (page 147) shows for cities of 20,000 and more population a class size of 10.2, 14.8, 13.9, 22.1, 20.9, 20.6 respectively in drawing, household arts, manual arts, English, mathematics, and science. In practically all cases the academic subject groups are from 50% to 100% larger.

(5) The increase in the number of classes referred to above, together with demands for rooms for varied types of work, calls for an increase in the total number of class rooms, which in turn demands an increased outlay for buildings.

(6) The introduction of practical arts and vocational courses in the junior high school, or any other school, calls for large expenditures for laboratory and shop equipment. In those schools which utilize a common building and common equipment for the junior and senior high schools, the expense may not be greatly increased by the junior organization, but rather such combination favors a better utilization of facilities already provided for the high school. All schools in Indiana, whether they adopt the junior high school name and habits or not, must require manual

and domestic arts or agriculture in the seventh, eighth, and ninth grades. Hence the cost for the junior type school need be little different from that of other schools, except where wide differentiation and numerous courses are provided.

(7) It is claimed that the introduction of enriched and vocational subjects in the junior high school will and does increase interest among pupils in school work and result in the longer retention of pupils for a longer period of years in school.

This is given as one of the chief of the junior high school aims, and, except in the small schools, costs will increase to the extent that it is realized. Data that I give in another section of this investigation show that certain Indiana schools, during the past five years have increased by as much as 18% the number of pupils who are retained thru the seventh and eighth grades. In the large school this added retained list will add to the total cost for the system by necessitating more classes but not to the per capita cost, but in the small schools, whose class groups are below an economic standard size, the total cost will remain the same while the per capita cost will be actually decreased.

If a trained citizenship is the measure of educational values, then high retention and adequate training are to be sought; if, however, low money cost is the objective, the best school will be the one which eliminates all its pupils earliest.

*c. Conditions arising out of miscellaneous administrative practices.*

(1) In the junior high school the tendency is to lengthen all class periods to approximate high school standards.

This, while valuable for the pupil, reduces the number of classes taught by each teacher in a day and hence adds to the cost of instruction. My data show that the usual eight-four type of grammar school has a class period of 25 to 30 minutes in length, while those of the junior type have from 40 to 60 minute periods. The average difference is about 10 minutes. The total length of the school day in the two types of schools is about the same.

(2) Supervised study appears to be an almost universal feature of practice in Indiana junior high schools. This is one of the chief contributing factors for the lengthened class period just mentioned. The old type grammar school had and has ten or

eleven 30 minute periods without directed class study. The usual high school period is 40 minutes. With the introduction of the junior type school the tendency is to divide the day into six 60 minute periods. This practice, while enhancing the value of the instruction, necessarily costs more.

(3) As the junior school approximates the high school standards there has been a marked tendency to reduce the size of classes in academic subjects from 30 or more to 20 or 25 pupils.

This is no doubt in keeping with the ideals of a more adequate adaptation of work to pupil needs, but it necessarily results in added costs.

(4) The departmental type of instruction, which is an almost universal feature of junior high school organization, will result in a poor coördination of teaching effort by the various teachers unless the work is unified thru close and thorough supervision of a type not demanded under the older organization. In the small school system the change will probably call for no additional expense, and in the larger system the centralization of the upper grades may result in a saving even with improved supervision, if the supervisory expense of the ward buildings containing the first six grades is reduced; if not, then the concentration will call for additional supervision of a more expensive quality.

(5) Retardation and repetition of work are prolific sources of increased costs.

The junior school, however, with its greater attention to the individual and its provision for varied types of work seeks to reduce this repetition, and to the extent to which it is successful it will reduce rather than increase costs.

Strayer<sup>8</sup> estimates that 10% of all seventh grade pupils and 8% of all eighth grade pupils are repeating work previously taken. This would give an average of at least 9% for the two grades. Ayers<sup>9</sup> states that in the average city elementary school the average number of years to reach the point where pupils are is 111% of the normal time that should be required without failure and repetition. Or, he says, that the cost is 11% greater than the per capita cost should be.

An examination of certain data in this study relative to retention will show that in some schools the per cent of progress thru grades seven and eight is not more than 80% of what it

<sup>8</sup> Strayer, G. D. Age and Grade Census of Schools and Colleges. U. S. Bur. Ed. bulletin No. 5, 1911. p. 136.

<sup>9</sup> Ayers, L. P. Money Cost of Repeating vs. Money Saving thru Acceleration. Am. Sch. Board Jr. Jan. 1912. pp. 13, 14.



normally should be, and the showing would probably be much worse if pupils did not stop the repeating process by leaving school as soon as permitted by law. The Butte Survey Report<sup>10</sup> shows an eighth grade non-promotion of 10.3% and an elimination of 11.3%. In a previous study<sup>11</sup> on the per cent of failures in high school subjects, I have shown that certain Indiana high schools are failing as high as 59% of all boys taking first year German and 41% of all boys in first year Latin and 39% of all boys in first term English.

Specifically, the above facts on failure and repeating mean this, that failure of promotion leads to retardation or elimination; if the pupil leaves he is not receiving the training the community intended him to have; and if he repeats, either classes will be overcrowded or new classes must be organized. In the latter case the school budget must be enlarged to provide more building room and a larger teaching staff.

In the small school with its small classes and possibility of much attention to individuals, retardation and failure should be prevented in the maximum degree. Also a small amount of repetition here would not increase costs because the class size permits of the repeater being carried without additional sections being organized.

## 2. FACTORS WHICH TEND TO REDUCE COSTS.

The junior high school program is not one of retrenchment but rather one of expansion and enrichment. Such a policy invariably calls for added rather than lessened expense. However, there are certain features of administration where the junior type of organization may effect certain economies.

(a) Thru centralization of seventh and eighth grades at central buildings, not only can greater variety and differentiation be provided, but at the same time a standard class size may be maintained which shall make for economy.

(1) Where these grades are scattered in outlying buildings there will necessarily result many small classes and some overcrowded ones, which may be eliminated at a central plant with a saving in the total teaching force, other conditions remaining the same.

<sup>10</sup> Report of the Survey of the School System of Butte, Mont. p. 27.

<sup>11</sup> Childs, H. G. "Per Cent of Failures in High Schools." Bulletin of the Third Conference on Educational Measurements, Indiana University, 1917. pp. 188-191.

(2) It has been advocated that such centralization makes possible a saving in supervisory costs, but as I have previously stated, it appears to me that such centralization will tend to increase such cost by providing a better type of supervision.

(3) Without doubt such centralization will reduce enormously the cost of shop and laboratory equipment over what would be the case if such facilities were provided for every elementary school building and then only partially utilized.

(4) To the extent that centralization prevents idle equipment and unused rooms for much of the time, it reduces costs by requiring fewer total rooms and even buildings. And to the extent that there may be a saving in the number of rooms and buildings, there will be a saving in heating, lighting, and janitor service and other factors in up-keep.

(b) A constantly maintained policy of elimination will ultimately result in a saving in the grammar grades and high school costs, because the main factor making for increased costs, the pupil, will have been removed. Such a policy would result in fewer buildings, fewer teachers, less equipment and all the various factors that make up the modern school. As I have previously indicated, however, the junior high school is seeking to prevent elimination and to increase retention.

(c) Prevention of failure, repetition and retardation will reduce costs as compared with present conditions.

### SUMMARY.

Opinion seems to be varied relative to junior high school costs, apparently due to lack of accurate cost data and to variable aims and organization, some officials having cost saving as their dominant purpose, while others are seeking an enriched educational program regardless of cost.


The data for the Indiana junior high schools indicate that such organization costs about 6% more for the seventh and eighth grades in the larger schools and 6% more for the upper six grades combined in small consolidated schools than does the ordinary grammar grade-high school organization for the same size of school, and from 15% to 20% more in small city junior high schools in the upper six grades than in non-junior schools in cities of corresponding size. Reference to programs of study in schools of the various types indicates that the junior high school

group, on the average, are providing a more varied type of educational program and have a teaching force which has had a superior training to teachers in grammar grades in other types of organization.

A summary of other factors relative to junior high school costs indicates that on the whole we may expect them to be greater because of teachers with superior training, more men teachers, more teachers of special and vocational subjects, a more varied and enriched program of studies, differentiated curricula and smaller class groups, more shop and laboratory work with half credit value per unit of time, lengthened class periods and supervised study, better supervision, longer retention of pupils in school, demand for more room to accommodate the new types of work, and demands for more elaborate and expensive equipment.

The chief economies of this type of organization will come thru concentration of seventh and eighth grades at a central plant, utilization of a common teaching staff for grades seven to twelve in many schools, and a reduction in failure, retardation, and repetition of work.

The junior high school movement seeks to raise grammar grade work to the high school level by departmentalized methods of instruction, smaller classes, teachers with superior training and experience, superior facilities and equipment, and, most important of all, by enriched and differentiated courses of study and curricula. This must necessarily cost more than the traditional school training. To establish a junior high schools calls for the consideration of relative values. One of my correspondents writes: "The junior high school costs more, but that is no objection, for it is worth more."





b. *Comparative Measures of School Achievement.*

One argument frequently urged against the junior high school is that if the new studies and activities advocated are put into practice many elements of the present seventh and eighth grade work, long considered of fundamental importance in training for a common citizenship and daily utility, will have to be slighted or omitted altogether. Such arguments have been leveled especially against the introduction of differentiated courses in industrial arts, foreign language and the like.

Both Bagley and Coffman argue against any considerable differentiation in the grammar grades. Bagley<sup>1</sup> says that elementary education should provide "a basis of common feeling and common thought and common aspiration which is absolutely essential to an effective democracy." He says that if we must have differentiation to prevent elimination, then have it; but he ascribes elimination to other preventable causes. Coffman<sup>2</sup> urges "a curriculum consisting of minimum essentials—a curriculum consisting of those great facts and principles, which all should be expected to acquire within the limits of their respective capacities." With Bagley he argues for a uniform curriculum but differentiated methods to suit the individual child or group.

In the light of these and other similar objections I have attempted to ascertain to what extent certain schools that have radically modified their programs of study for the seventh and eighth grades are able to show a comparatively creditable achievement in certain subjects, notably English and mathematics, which are generally classed among the necessary common elements referred to as compared with another group of schools whose programs show them to be devoting their time chiefly to these saving elements.

For this purpose certain standard tests were administered in the eighth grades of twenty-one, out of a possible twenty-four consolidated rural and village high schools in two counties, which I shall designate as "A" and "B". These schools are in everything, except their programs of study, apparently much alike. Both counties are strictly agricultural, no one of these schools is in a town of over 1,200 population, and the school systems of both counties are considered to be among the best in Indiana.

<sup>1</sup> Bagley, W. C. *The Six-six Plan*. School & Home Education. 34:3-5.

<sup>2</sup> Coffman, L. D. *Minimum Essentials vs. Differentiated Courses of Study in Seventh and Eighth Grades*. N. E. A. Proc. 1916. p. 953.

COMPARISON OF CONDITIONS IN SCHOOLS "A" AND "B"  
(GRADE 8).

<i>Items of comparison</i>	<i>Co. "A".</i>	<i>Co. "B".</i>
Program of studies (periods a week):		
Reading or literature . . . . .	2.	5.
Grammar . . . . .	1.	4.
Composition . . . . .	1.	1.
Spelling . . . . .	incidental	2.5
Writing . . . . .	0.	2.5
Arithmetic . . . . .	4.	5.
History . . . . .	4.	5.
Geography, physiology, hygiene . . . . .	0.	7.
General science . . . . .	4.	0.
German . . . . .	4.	0.
Agriculture or manual training . . . . .	2.	2.
Domestic science . . . . .	2.	2.
Drawing . . . . .	1.	1.5
Music . . . . .	1.	1.5
Time distribution in minutes:		
Length of recitation periods . . . . .	25.	25.
Length of supervised study periods . . . . .	15.	0.
Weekly time to formal reading recitation . . . . .	50.	125.
Weekly time to grammar-composition . . . . .	50.	125.
Weekly time to spelling . . . . .	incidental	62.5
Weekly time to arithmetic . . . . .	100.	125.
Per cent of total time to reading . . . . .	8.3	13.5
Per cent of total time to spelling . . . . .	0.	6.75
Per cent of total time to arithmetic . . . . .	16.7	13.5
Per cent of time to foreign languages . . . . .	16.7	0.
Per cent of time to new or special subjects . . . . .	50.0	13.5

County "A" schools have been working on this schedule for two years so that present eighth grades have not had the traditional amount of time for English but have substituted German for one-half the time usually given to the vernacular.

Probably all will agree that English language and literature and arithmetic are fundamentally important subjects of study containing essential elements to be incorporated in the education of all children, and that pupils ought to acquire a reasonable proficiency in them. "A" schools have transferred much time from English to German, and if common elements are neglected, the field of English should be conspicuous for low achievement.

The tests given were the Woody Arithmetic Series B, Multiplication Scale;<sup>3</sup> Ayers Spelling Scale<sup>4</sup> (first 25 words column T); Thorndike Reading Scale, Alpha 2, part II;<sup>5</sup> and the Thorndike Visual Vocabulary Scale, A 2 x.<sup>6</sup>

The coöperation of the county superintendents and the school principals was hearty and cordial, and uniform directions for the administration of the tests were sent with the tests. These tests were given in the various schools on March 13th and 14th, 1917, and all the test papers were forwarded to me at once by the principals. All scoring on the reading and vocabulary tests was done by the writer, and that of the arithmetic and spelling directly under my supervision, and has been rechecked to make sure of accuracy and uniformity in scoring.

<sup>3</sup> Woody, C. The Measurement of Some Achievements in Arithmetic. Teachers' College Contributions to Education, No. 80. 1916.

<sup>4</sup> Ayers, L. P. Measuring Scale for Ability in Spelling. Sage Foundation. New York, N. Y.

<sup>5</sup> Thorndike, E. L. An Improved Scale for Measuring Ability in Reading. Teachers' College Record, Nov. 1915. p. 31.

<sup>6</sup> Thorndike, E. L. Measurement of Achievement in Reading, Word Knowledge. Teachers' College Record, Nov. 1916. p. 430.





TABLE 21.  
 AYERS' SPELLING TEST RESULTS (COLUMN T), COUNTY "B".

SCHOOL	NO. OF PUPILS	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	AVERAGE SCORE	PERCENT CORRECT		
1	11								1			1							1			3						19.4	77.6		
2	14																				1	2	1	1			5	18.7	74.8		
3	30			1				1			1								2	1	1	1	3	3	4	4	3	19.5	78.0		
4	13																				1	1				2	2	3	21.5	86.0	
5	26					1								1	1	2	1			1	1	1	3	3	4	2	4	20.0	80.0		
6	22													2	2					1	1	1	4	3	3	5	21.2	84.8			
7	24										1			1	4	4	2	2	1				4	2	1	2	2	18.4	73.6		
8	10										1						1			3								20.1	80.4		
9	18							1		1							1	2		1	3			2	4	1	1	18.5	74.0		
10	25							1	2		1	1	1	1	1		2	3	1	1	1	1	1	3	3	4	1	18.7	74.8		
11	14													1		1	1			1	2	2	2	3	1	1	1	20.1	80.4		
Total....	207				1	1	1	2		4	6	1	3	4	8	10	12	10	5	11	16	16	18	18	19	23	23	28	19.5	78.0	
		Q.....																												3.45	
		Average by schools.....																												19.8	79.2

Note: The Ayers' Scale for spelling, column T, consists of 34 words of equal difficulty, according to Ayers, and of such difficulty that the average eighth grade has 88% correct spellings. The first 25 words of column T were used in this test.

Tables 20 and 21 show the comparative results for the spelling test, and should be read: in county "A" school No. 1 gave the test to 14 eighth grade pupils, of whom 1 spelled 7 words correctly; 1, 10; 2, 15; 1, 18; 1, 20; 3, 21; 1, 22; 1, 23; 1, 24; and 2, 25. The average score for school No. 1 is 19.1 words, and the average per cent of correct spellings is 76.4. Of the 10 schools from county "A" participating in some of the tests, but 8 sent in spelling returns.

The per cent of correct spellings is determined by multiplying the average score by 4, since 25 words constituted the list, and this multiplied by 4 gives 100, or a perfect score. The average of all individual pupil scores for county "A" is 64 per cent and for county "B" the corresponding score is 78 per cent of correct spellings. The results are uniformly better for county "B" but in both counties the results are far below the Ayers' standard of 88 per cent of correct spellings for eighth grade pupils. On the basis of school averages, "A" schools score but 81.3% as high as "B".

If it is reasonable to assume that eighth grade pupils should be able to spell correctly such words as the Ayers' T column (guess, circular, argument, volume, organize, and the like), then county "A" schools are deficient in their provision for efficient spelling. On consulting the time assignment in the program of work for the "A" schools, spelling does not appear in the list of subjects taught. "B" schools give 62.5 minutes weekly to spelling and make a much higher score on the test. "A" schools have apparently slighted spelling, and the test results would indicate that additional time could be profitably assigned to this subject since other schools that give definite time to spelling secure noticeably better results. Perhaps an additional 40 minute period weekly should be assigned spelling by "A" schools or its equivalent in distributed shorter periods.

The "Q" (3rd quartile minus 1st quartile score divided by 2) for "A" schools is 7 and for "B" schools, 3.45. This indicates that regular class work in spelling keeps the results in "B" schools much more uniform than in "A" schools where there is wide variation from the central tendency, probably due to the fact that some schools give some spelling incidentally in connection with other school work while others do not.



## (2) READING, UNDERSTANDING OF SENTENCES.

It was thought that if there was definite value in daily formal reading or a weakness in ability to read understandingly because of giving little time to formal work in reading and literature a test by the Thorndike reading scale, alpha 2, part II, should make this apparent.

This scale consists of a series of prose paragraphs of different and known degrees of difficulty, and the ability measured by the test, according to Thorndike, is that of getting the message carried by a continuous passage. Or it is the ability to read silently and understand the given passages. The pupil reads the paragraph and answers, in writing, questions relating to it and so worded as to demand a minimum of ability in expression in indicating the interpretation of the reading.

TABLE 22.  
THORNDIKE READING TEST RESULTS, COUNTY "A".

SCHOOL	NO. OF PUPILS	NO. OF ERRORS FOR EACH DIFFICULTY				SCORE FOR 80% CORRECT RESULT
		7	8	8½	9	
1	15	22	54	46	66	6.95
2	9	11	34	22	35	7.14
3	17	21	63	56	74	7.13
4	8	7	27	28	26	7.46
5	13	12	48	39	48	7.41
6	11	14	40	27	54	7.10
7	16	22	47	44	68	7.02
8	11	20	33	33	50	6.70
9	8	13	33	29	35	6.84
10	15	28	60	45	68	6.67
Total .	123	170	439	369	524	7.01
School average . . . . .						7.04
Q . . . . .						.25

TABLE 23.  
THORNDIKE READING TEST RESULTS, COUNTY "B".

SCHOOL	NO. OF PUPILS	NO. OF ERRORS FOR EACH DIFFICULTY				SCORE FOR 80% CORRECT RESULT
		7	8	8½	9	
1	11	9	47	25	29	7.52
2	13	18	51	41	58	7.01
3	31	46	118	84	139	6.94
4	14	13	40	44	53	7.40
5	25	18	78	72	104	7.39
6	22	33	63	61	89	6.88
7	23	28	98	73	103	7.14
8	10	8	29	24	37	7.40
9	18	3	53	50	69	7.25
10	23	37	62	73	88	6.85
11	15	8	34	47	62	7.60
Total .	205	221	673	594	831	7.26
School average . . . . .						7.22
Q . . . . .						.25

Tables 22 and 23 show the comparative results, and should be read: in school No. 1 of group "A", 15 pupils were tested in reading; they made 22 errors in difficulty 7; 54 errors in difficulty 8; 46, in difficulty  $8\frac{1}{2}$ ; 66, in difficulty 9; and they could read material of 6.95 difficulty with 80% efficiency. The method of determining the difficulty at which 80% correct results are achieved is that described by Thorndike in the reference given above. The degree of difficulty at which 80% correct responses were given by the pupils is, for schools of county "A" (school average) 7.04 and for county "B" 7.22. The "A" schools are therefore about  $2\frac{1}{2}$ % less efficient than "B" schools, that is, they can read with 80% correctness material that is about  $2\frac{1}{2}$ % less difficult. Thorndike estimates that eighth grade pupils should make a score of approximately 7.5 and seventh grade pupils, 7. The average score for 18 Indiana schools in grade eight is 9.<sup>7</sup>

Our results show "A" schools slightly inferior to "B" schools in ability to read and interpret the material of the Thorndike tests. Are we warranted in assuming that the superiority of the "B" schools is due to the extra time they give to formal reading over that of the "A" schools? There seem to be four important factors to be taken into consideration; first, do these tests adequately measure reading ability? Second, granting that additional time given to formal reading will improve the results in this case, will the slight improvement necessary to equalize the results in these two groups of schools warrant the outlay of 70 minutes additional time weekly? Third, if additional time were given, are we sure the results would improve? And fourth, where do pupils acquire their ability to read silently and to interpret what they read? No doubt the formal reading develops this ability somewhat, but their reading in various other school subjects and miscellaneous reading is probably far more extensive than the special work of the reading period, and the accuracy of reading and interpretation will depend upon the excellence of teaching in all subjects, upon the degree to which teachers compel their pupils to read carefully and thoughtfully the lessons assigned. The schools of both counties are considerably below eighth grade standards and should probably stress somewhat more the power to read and interpret the printed page, but it is not apparent that adding time to the formal reading period will achieve the desired results.

<sup>7</sup> Haggerty, M. E. *The Ability to Read*. Ind. University Studies. No. 34, 1917. p. 14.

Assuming that important aims of reading are to produce ability in recognizing the words read and in interpreting their meaning, and assuming that this alpha test adequately measures such ability, the data of tables 22 and 23 show conclusively that the eighth grades in "A" schools achieve more than 97% of the efficiency of the eighth grades in "B" schools with an expenditure of 40% of the time given by "B" schools to formal reading. Or stated differently, "A" schools have lost practically nothing in silent reading efficiency by giving one-half or more of the usual English time to foreign language.

In both groups of schools the time limit for the test was fixed at 30 minutes and this may have been rather too short a period for this test. If so the results in both groups would tend to drop below the Thorndike norm if we consider all responses given, but by the Thorndike method of scoring, that difficulty is taken as the score at which the pupil makes 20% errors, and as this invariably fell for these schools in difficulties 7 or 8, the length of the time would hardly affect the result as all pupils had time to go beyond difficulty 8. In fact, most pupils seem to have attempted practically all the exercises of the tests, which would indicate sufficient time. Then, too, it is comparative scores we are seeking, and not necessarily high scores compared with other schools at another time and place.

A "Q" of .25 means that in 50% of these schools the variation from the central tendency is less than  $3\frac{1}{2}\%$  of the central tendency. This shows uniform results in all school of each group as measured by this test. This close grouping of the scores for both groups of schools, in spite of the wide time variation between the two groups assigned to formal reading, indicates that the cause of the uniformity must lie outside the time element.

### (3) VISUAL VOCABULARY TEST.

According to Thorndike, "the obvious purpose of these scales is to measure how hard words a pupil can read in the sense of understanding their meaning well enough to classify them under the proper heading, as an animal, a flower, something about time," etc.<sup>8</sup> The ability to recognize printed words and to have meaning for them in sentences constitutes the essence of reading. If extra time, over that of the "A" schools, given to formal reading, will improve silent reading ability markedly, it should be apparent in the results of either the previous test or this one or both as applied to the "B" schools.

<sup>8</sup> Thorndike, E. L. "The Measurement of Achievement in Reading, Word Knowledge." *Teachers' College Record*. Nov. 1916. p. 430.







Tables 24 and 25 show the comparative results of the vocabulary tests, and should be read: in school No. 1 of county "A" 15 pupils were tested, 3 errors were made in difficulty 4; 7, in difficulty 4.5; 10, in difficulty 5; etc.; and the average difficulty at which these pupils had 20% errors or 80% efficiency is 7.2. For "A" schools the average for all pupils is 6.9 and for "B" schools 7.1. "B" schools have a superiority as measured by this test of slightly less than 3%. The small values for Q indicate a close grouping of the schools about their central group tendencies, that is, 50% of the schools vary from the median by less than 6% of its amount for the junior or "A" schools. When the papers are scored by the Thorndike method of line averages, the average for "A" schools is 7.9 and for "B" schools, 8.2. As in the previous test the close grouping of the scores about a common central tendency (7) indicates that the uniformity is due to some other factor than the time distribution for English in the two groups of schools, for this is  $2\frac{1}{2}$  times as much in the "B" schools as in the "A" schools. The superiority in the "B" score is about two words on the list of 130 words in the whole test series. Even this small difference may be due, in part, to differences in time allotment to formal English, but we should be hardly warranted in advising a 150% increase in reading time to secure a 3% improved in efficiency as measured by this test.



## (4) MULTIPLICATION TEST\*

TABLE 26.  
MULTIPLICATION TEST RESULTS, COUNTY "A".

SCHOOL	NO. OF PUPILS	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	AV.	
1	13														1	1	2	1	2	1	5	1	17.4	
2	9													1	1	1	1	1	1	1	1	1	15.0	
3	17									1		1	1	2	3	2	1	1	1	3	2	2	14.1	
4	8										1						1	1	1	3	1	1	16.3	
5	13											1	1		2	1	4	5		1			15.2	
6	15												1	1	1	1	1	2	1	3	2	1	15.7	
7	17								1					1	1	1	1	5	2	3	2	1	16.1	
8	11													2	2	1	2	2	1	1			14.6	
9	7											1			1		1			2	2		16.0	
10	15									1	1	1	1			1	3	2	1	4			14.5	
Total.....	125								1	2	2	4	4	7	12	7	17	20	14	16	15	4		15.4
School average.....																								15.5
Q.....																								.82

\*The Woody Multiplication Scale, series B, consists of a series of 20 exercises of varying degrees of difficulty ranging from 3x7 to .0963 $\frac{1}{2}$ gx.084. Pupils are given 10 minutes in which to solve the problems, and the score is the number of problems correctly solved in the given time.



Tables 26 and 27 show the comparative results for the multiplication test, and should be read: in county "A" 13 pupils of school No. 1 wrote the test, of whom 1 solved 13 problems correctly; 2, 15; 1, 16; 2, 17; 1, 18; 5, 19; and 1, 20; with an average of 17.4. The average of all individual scores in county "A" is 15.4 and in "B", 15.2. The average of the school averages is 15.1. The *Q* in each group is small and indicates a uniform distribution near the central tendency of achievement in all the schools of each group. The differences in these two sets of scores are slight and show a slight superiority in the "A" schools. The differences in the amount of time given to class work in arithmetic in the various schools of the two counties are also not great, being in "A" schools from 100 to 120 minutes a week and in "B" schools 125 minutes. Neither group of schools equals the Woody standard score of 18 for the eighth grade. The fact that most of these pupils are unaccustomed to taking tests of this sort may have been responsible, in part, for the low scores, or it may be that neither system is emphasizing drills in fundamental processes in the grammar grades, and that pupils do not acquire and keep up a high standard of proficiency in them. It would probably be best for these schools to assume that they are devoting sufficient time to arithmetic and to experiment with a better distribution of the time within the subject and to formulate more definitely just what objectives they are working for before allotting more time to the subject.

Haggerty<sup>9</sup> found that there was little correlation between excellence in arithmetic scores by the Courtis standard tests and the time devoted to arithmetic in the various schools.

As a result of this test we conclude that the marked change in program emphasis by the schools of county "A" has not caused any deterioration in arithmetic achievement as compared with the schools of county "B" which still give their major emphasis to the traditional subjects.

#### SUMMARY.

To summarize briefly, the schools of county "A" show approximately the same quality of achievement in arithmetic, reading for understanding of sentences, and in visual vocabulary recognition as do the schools of county "B". In spelling, which is more dependent on formal drill for its results than is reading, they

<sup>9</sup> Haggerty, M. E. *Arithmetic*. Indiana University Studies. No. 27. 1914.



are decidedly inferior, and probably need to devote more time specifically to securing spelling efficiency. Contrast with the "B" schools, which give more than double the "A" time to reading and other phases of formal English, does not give convincing proof that an increase in time for formal English in the "A" schools would be spent with profit. They are probably receiving other values of various kinds thru the study of German that more than counterbalance any that have been lost. The limited evidences of all these comparative tests do not offer any convincing proof that, even when one-half to three-fifths the usual time is taken from the chief of our "common elements", there has been any marked deterioration in the quality of achievement as compared with other schools devoting much more time to this work and less to new subjects. In the above evaluation, "as measured by these tests," should be understood.

c. *The Measurement of Retention Thru Grammar Grades and High School.*

(1) GENERAL DISCUSSION.

One of the chief advantages claimed for the junior high school type of organization is that it retains pupils longer in school than do other forms of grammar grade organization. For fifteen years the claim has been made by practically every advocate of re-organization, but the statistical evidence supporting the claim has not been of a convincing sort, and for the most part there has been no evidence offered other than mere opinion.

Without doubt principals and superintendents who have introduced the junior high school type of organization have assumed that the increasing grammar grade and high school enrollments of the past few years have been due to this new organization, without considering the fact that other schools on the old eight-four plan of organization and that schools without even departmental organization have had equally great increases in enrollments.

In the report of his investigation in 1914, Briggs<sup>1</sup> states that 107 principals of junior high schools declare that junior high school organization retains pupils better than the old organization; 2, that it does not; and 3 say they don't know.

<sup>1</sup> Briggs, T. H. The Junior High School. Report of U. S. Com'r of Ed. 1914. Vol. I. pp. 142 and ff.

In response to his inquiry relative to the longer retention in school of pupils in the junior high school, Bingaman<sup>2</sup> received 91 affirmative replies, 4 negative, and 7 indicating doubt.

A Los Angeles report<sup>3</sup> for 1913-14 indicates that the average enrollment in grades seven to nine from 1897 to 1903 was 13.7% of the total school enrollment; 17.2% in 1904 to 1911; and 20.1%, 1912 to 1914. The junior high school organization went into effect in 1911. As the increase in the enrollments was as great in the period immediately preceding 1911 as in the one following it, these figures do not seem to warrant the conclusion that the junior high school organization was responsible for the improvement.

Moreover the data cited by Briggs from the Berkley schools to the effect that under the junior high school organization 94.73% of those completing the eighth grade enter the ninth proves nothing unless we know what the conditions were very shortly before the introduction of the reorganization movement. Fifteen years ago the writer was connected with a school that regularly carried from 95% to 100% of its eighth grade pupils into the ninth grade, and that with non-departmental teaching, promotion by grade, and with no manual training, domestic science or the other prevocational arts which are common subjects in the junior high school of the present time. This school still maintains a high record of retention in the grammar grades and between the elementary and high schools, and it has introduced manual training, domestic science, agriculture, promotion by subject, and various other features of the reorganized program. If the present superintendent has not consulted past retention records he may be harboring the delusion that a 95% retention between the eighth and ninth grades is entirely due to his introduction of the practical arts or to the assuming of the junior high school name.

The data cited by Briggs from Grand Rapids, which indicate a 10% higher ninth grade enrollment from eighth grade junior high school pupils than from eighth grade grammar school pupils appears to be significant; but if eighth grade graduates had to attend high school farther from home than the grammar school and also change to an unfamiliar environment while eighth grade graduates of the junior high school continued at the same building

<sup>2</sup> Bingaman, C. C. A Report on Intermediate or Junior High Schools of the U. S. 1915. (Goldfield, Ia.)

<sup>3</sup> The Intermediate Schools of Los Angeles. *El. Sch. Jr.* 15:361-377.

this 10% increase in favor of the junior high school may easily be due to "distance to travel" rather than to "junior high school." The gain of 28% reported in the per cent of eighth grade graduates entering the ninth at Evansville, Indiana, between 1912 and 1914, reported by Briggs in the reference just cited, must be considered in the light of facts submitted in January, 1917, by the present superintendent who, in a personal letter, says, relative to the retention of pupils, that the object of placing eighth grade pupils with the senior high school was to prevent their dropping out of school when they finished the eighth grade. He further states that it accomplished this to a large degree; that the pupils did not drop out after completing the eighth grade, but rather after finishing the seventh. Later he adds: "The sum of the pupils enrolled in the eighth and ninth grades in 1916 was exactly the same as that enrolled in the same grades in 1909 before the building of the present junior high school and the inauguration of our present scheme." It should also be noted that the city has had a very considerable growth during the past ten years.

The data submitted by Douglass<sup>4</sup> relative to elimination and retardation are very inconclusive. Corresponding data should have been collected from a large number of non-junior high schools at the same time and have been presented for comparison. Douglass' comparisons between his own data on elimination, collected in 1916, and that of Thorndike, published in 1907, are valueless for the purpose as vast changes have occurred during the nine year interval in both enrollments and elimination. Numerous opinions of superintendents and principals of junior high schools are quoted which are not substantiated by any statistical evidence. His figures relative to enrollments do not take into account population changes, nor do they take into account the fact that schools in large and small cities operate under vastly different conditions relative to attracting and holding pupils and that their data should be tabulated separately if they are to reveal significant facts. Furthermore his data relative to retardation in junior high schools do not take into account the fact that the conditions, good or bad, of over-ageness in the junior or senior high school may be, and probably are, largely due to conditions in grades 1 to 6 rather than in the junior high school. Information relative to the rate of progress thru the junior high school is what is desired rather than a

<sup>4</sup> Douglass, A. A. The Junior High School. XVth Year Book of National Society for Study of Ed. 1916, part III. pp. 101-113.



statement of retardation or acceleration without regard to what unit of the school system is responsible. Also comparisons of junior and senior high school enrollments are of less significance as measures of retention than are comparisons of both with the enrollment in grades 1 to 6 combined, which represents for the most part the school population of compulsory age.

(2) DATA FROM INDIANA SCHOOLS RELATIVE TO THE RETENTION PROBLEM.

a. *Retention as measured by enrollments.*

In order to ascertain the facts relative to retention in Indiana schools data of two types have been collected and tabulated. I shall first present enrollment data for grades 1 to 6, 7, 8, 9 and 10 to 12 from the majority of schools included in this investigation of each of the junior high school, departmental, and non-departmental groups, classified according to the population of the cities in which located. These data are based on enrollments for the first semester of the year 1915-16 and were reported by the superintendent as the official enrollments for the term indicated. Data were reported from 28 junior, 33 departmental, and 23 non-departmental schools.

The purpose of the collection and tabulation of these data is to ascertain for each type of school and for each population group the per cent of enrollments in the junior and senior high schools grades as compared with enrollments in the first six grades. More specifically the purpose is to compare junior and senior high school percentile enrollments in school of the junior type with the corresponding percentile enrollments in schools of the departmental and non-departmental types. Enrollments in grades 1 to 6 have been taken as basal because attendance in these grades is, with few exceptions, compulsory, and this group of pupils has a more constant and uniform ratio to population than that of any other school group. From the comparisons indicated above it is hoped that some conclusions may be warranted relative to the retaining power of the junior and non-junior type schools.

TABLE 28.

RETENTION IN JUNIOR HIGH SCHOOLS IN TERMS OF ENROLLMENTS IN CITIES OF LESS THAN 5,000 POPULATION, WITH A MEDIAN POPULATION OF LESS THAN 1,000.

SCHOOL	ENROLLMENT GRADE				% ENROLLMENT IS OF ENROLLMENT OF GRADES 1 TO 6					% EN. 10-12 IS OF 7-9	
	1-6	7	8	9	10-12	7	8	9	7-9	10-12	OF 7-9
2	108	16	13	24	41	14.8	12.0	22.2	49.0	38.0	54.1
5	55	15	9	10	23	27.3	16.4	18.2	61.9	41.8	67.6
6	...	21	16	9	24	....	....	....	....	....	52.2
8	120	17	18	12	34	14.2	15.0	10.0	39.4	28.3	72.4
9	356	48	27	40	60	13.5	7.6	11.2	32.3	16.9	52.2
14	442	48	32	19	37	10.9	7.2	4.3	22.4	7.4	37.4
15	67	9	9	7	4	13.4	13.4	10.4	37.2	6.0	16.0
17	102	11	14	15	18	10.8	13.1	14.1	38.0	17.6	45.0
19	101	16	15	17	38	15.9	14.9	16.9	47.7	37.8	79.1
23	300	40	35	50	75	13.3	11.7	16.7	41.7	25.0	60.0
33	356	65	49	63	103	18.2	13.8	17.7	49.7	28.9	58.2
34	...	20	20	17	29	....	....	....	....	....	50.9
35	170	24	22	25	60	14.1	12.9	14.7	41.7	35.3	84.5
No.....						11	11	11	11	11	13
Average.....						15.1	12.5	14.2	41.9	25.7	56.1
Median.....						14.1	13.1	14.7	41.7	28.3	54.1

TABLE 29.

RETENTION IN JUNIOR HIGH SCHOOLS IN TERMS OF ENROLLMENTS IN CITIES AND TOWNS OF FROM 5,000 TO 19,000 POPULATION, WITH A MEDIAN POPULATION OF 8,500.

SCHOOL	ENROLLMENT GRADE				% ENROLLMENT IS OF ENROLLMENT OF GRADES 1 TO 6					% EN. 10-12 IS OF 7-9	
	1-6	7	8	9	10-12	7	8	9	7-9	10-12	OF 7-9
3	1,491	225	143	172	292	15.1	9.6	11.5	36.2	19.6	54.1
4	1,297	147	138	173	290	11.3	10.6	13.3	35.2	22.3	63.3
7	1,079	160	127	104	259	15.0	11.8	9.7	36.5	24.0	66.2
16	870	118	68	93	205	13.6	7.8	10.7	32.1	23.6	73.1
20	748	99	71	82	173	13.2	9.5	10.9	33.6	23.1	68.6
24	902	112	89	68	182	12.4	9.9	7.5	29.8	20.2	67.6
27	856	75	46	56	137	8.8	5.4	6.8	21.0	16.0	77.4
28	890	89	65	101	158	10.0	7.3	11.3	28.6	17.7	61.9
31	1,100	100	85	100	253	9.1	7.7	9.1	25.9	23.0	88.8
No.....						9	9	9	9	9	9
Average.....						12.1	8.8	10.1	31.0	21.1	69.0
Median.....						12.4	9.5	10.7	32.1	22.3	67.6

TABLE 30.

RETENTION IN JUNIOR HIGH SCHOOLS IN TERMS OF ENROLLMENTS IN CITIES OF 20,000 AND MORE POPULATION, WITH A MEDIAN POPULATION OF 28,000.

SCHOOL	ENROLLMENT GRADE					% ENROLLMENT IS OF ENROLLMENT OF GRADES 1 TO 6					% EN. EN. 10-12 IS OF 7-9
	1-6	7	8	9	10-12	7	8	9	7-9	10-12	
10	2,717	223	129	110	126	8.2	4.7	4.0	16.9	4.6	27.3
11	2,191	343	264	210	364	15.7	12.0	9.6	37.3	16.6	44.6
12	8,133	818	500	318	612	10.1	6.1	3.9	20.1	7.5	37.4
21	2,591	429	298	233	359	16.6	11.5	8.9	39.0	13.8	37.4
25	2,664	296	235	267	436	11.1	8.8	10.0	29.9	16.3	54.6
30	2,591	224	181	150	315	8.6	7.0	5.8	21.4	12.2	56.8
No.....						6	6	6	6	6	6
Average.....						11.7	8.3	7.0	27.4	11.8	43.0
Median.....						10.6	7.9	7.3	25.6	13.0	41.0

TABLE 31.

RETENTION IN DEPARTMENTAL SCHOOLS IN TERMS OF ENROLLMENTS IN CITIES AND TOWNS OF LESS THAN 5,000 POPULATION, WITH A MEDIAN POPULATION OF 2,800.

SCHOOL	ENROLLMENT GRADE					% ENROLLMENT IS OF ENROLLMENT OF GRADES 1 TO 6					% EN. EN. 10-12 IS OF 7-9
	1-6	7	8	9	10-12	7	8	9	7-9	10-12	
3	...	21	15	25	47	....	....	....	....	....	77.0
5	444	57	57	63	127	12.8	12.8	14.2	39.8	28.6	71.8
7	328	33	25	34	80	10.1	7.6	10.4	28.1	24.4	87.0
8	541	80	59	55	121	14.8	10.9	10.2	35.9	22.4	62.4
21	356	52	31	37	77	14.6	8.7	10.4	33.7	21.6	64.2
22	348	53	31	44	90	15.2	8.9	12.6	36.7	25.9	70.3
23	492	72	57	79	136	14.6	11.6	16.0	42.2	27.6	65.4
25	180	22	12	14	35	12.2	6.7	7.8	26.7	19.4	72.9
26	463	73	54	77	158	15.8	11.7	16.6	44.1	34.1	77.8
27	316	52	37	48	85	16.5	11.7	15.3	43.5	26.9	62.0
28	151	27	19	24	52	17.9	12.6	15.9	46.4	34.4	74.3
29	347	55	46	63	127	15.8	13.2	18.1	47.1	36.3	77.4
31	...	24	23	40	59	....	....	....	....	....	67.8
33	168	21	19	31	69	12.5	11.3	18.4	42.2	41.1	97.2
35	200	25	26	30	63	12.5	13.0	15.0	40.5	31.5	77.8
No.....						13	13	13	13	13	15
Average.....						14.3	10.8	13.8	38.9	28.7	73.7
Median.....						14.6	11.6	15.0	40.5	27.6	72.9



TABLE 32.

RETENTION IN DEPARTMENTAL SCHOOLS IN TERMS OF ENROLLMENTS IN CITIES OF FROM 5,000 TO 19,000 POPULATION, WITH A MEDIAN POPULATION OF 8,800.

SCHOOL	ENROLLMENT					% ENROLLMENT IS OF ENROLLMENT					% EN. 10-12 IS OF 7-9
	1-6	7	8	9	10-12	7	8	9	7-9	10-12	
1	1,343	132	122	127	166	9.8	9.1	9.5	28.4	12.3	43.6
2	723	90	67	80	158	12.4	9.3	11.1	32.8	21.8	62.4
4	1,347	120	67	87	161	8.9	5.0	6.5	20.4	11.9	58.7
6	883	103	69	110	160	11.6	7.8	12.4	31.8	18.1	56.7
9	524	64	51	72	177	12.2	9.7	13.7	35.6	33.8	94.7
10	1,216	116	122	84	171	9.5	10.0	6.9	26.4	14.1	53.1
11	1,148	170	139	115	296	14.8	12.1	10.0	36.9	25.8	69.8
12	523	89	61	70	132	17.0	11.6	13.4	42.0	25.2	60.0
14	1,195	114	85	116	171	9.6	7.1	9.7	26.4	14.3	54.3
15	874	92	69	74	120	10.5	7.9	8.4	26.8	13.7	51.1
18	1,455	158	105	98	161	10.8	7.2	6.7	24.7	11.1	44.6
19	1,546	130	167	90	161	8.4	10.8	5.8	25.0	10.4	41.6
20	658	88	75	97	120	13.4	11.4	14.7	39.5	18.2	46.1
24	852	82	64	68	120	9.6	7.5	8.0	25.1	14.1	56.1
30	770	100	80	...	...	13.0	10.4	...	...	...	...
32	1,205	156	128	102	171	12.9	10.6	8.5	32.0	14.2	44.3
No. ....						16	16	15	15	15	15
Average .....						11.5	9.2	9.7	30.2	17.3	55.8
Median .....						11.2	9.5	9.5	28.4	14.2	54.3

CHART 3.  
Retention in terms of enrollments, based on tables 28 to 33, inclusive.

"a" schools in cities of 5,000 —  
"b" schools in cities of 5,000 to 19,000.

"c" schools in cities of 20,000 and +.

Numbers at left represent per cent enrollments are of enrollments in grades 1 to 6.

— junior schools.  
--- departmental schools.

Upper pair of lines, grades 7 to 9.

Lower pair of lines, grades 10 to 12.

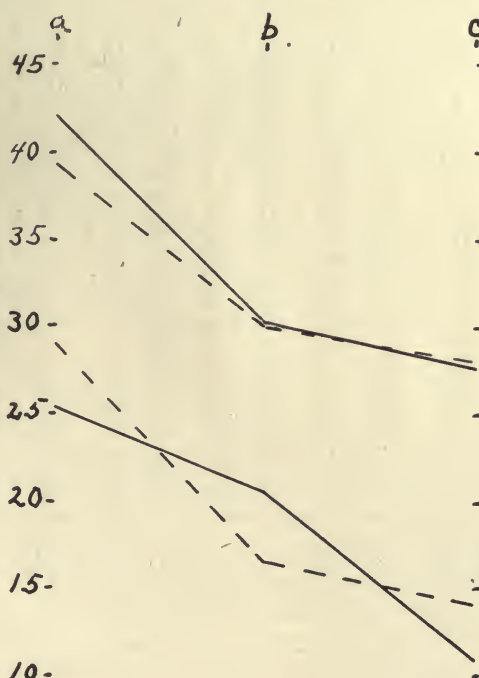


TABLE 33.

RETENTION IN DEPARTMENTAL SCHOOLS IN TERMS OF ENROLLMENTS IN CITIES OF 20,000 AND MORE POPULATION, WITH A MEDIAN POPULATION OF 22,000.

SCHOOL	ENROLLMENT GRADE					% ENROLLMENT IS OF ENROLLMENT OF GRADES 1 TO 6					% EN. 10-12 IS OF 7-9
	1-6	7	8	9	10-12	7	8	9	7-9	10-12	
13	2,387	250	221	201	454	10.4	9.3	8.4	28.1	19.0	67.5
16	2,748	323	229	184	381	11.7	8.3	6.7	26.7	13.8	51.8
17	1,746	199	156	161	160	11.4	8.9	9.2	29.5	9.2	38.4
No.....						3	3	3	3	3	
Average.....						11.2	8.8	8.1	28.1	14.0	52.6
Median.....						11.4	8.9	8.4	28.1	13.8	51.8

TABLE 34.

RETENTION IN NON-DEPARTMENTAL SCHOOLS IN TERMS OF ENROLLMENTS IN CITIES AND TOWNS WITH A MEDIAN POPULATION OF 1,350.

SCHOOL	ENROLLMENT GRADE					% ENROLLMENT IS OF ENROLLMENT OF GRADES 1 TO 6					% EN. 10-12 IS OF 7-9
	1-6	7	8	9	10-12	7	8	9	7-9	10-12	
1	181	28	30	35	88	15.9	16.9	19.3	52.1	48.6	94.6
2	84	11	11	8	30	13.1	13.1	9.5	35.7	35.7	100.0
3	340	41	45	44	100	12.1	13.2	12.9	38.2	29.4	76.9
4	150	31	23	32	63	20.7	15.3	21.3	57.3	42.0	73.0
5	190	31	16	32	64	16.3	9.0	16.8	42.1	33.7	81.0
6	379	65	72	57	122	11.2	12.4	9.8	33.4	21.1	62.9
7	193	13	20	28	39	6.7	10.3	14.5	31.5	20.2	63.9
8	91	12	14	7	28	13.2	15.4	7.7	36.3	30.8	84.8
9	175	20	32	20	54	11.4	18.3	11.4	41.1	30.8	75.0
10	270	35	31	25	45	13.0	11.5	9.2	33.7	16.7	49.4
11	124	12	12	16	24	9.6	9.6	12.9	32.1	19.3	60.0
12	483	68	62	68	162	14.1	12.8	14.1	41.0	33.5	81.8
13	155	24	14	30	48	15.5	9.0	19.3	43.8	31.0	70.6
14	197	26	38	34	93	13.2	19.3	17.2	49.7	47.2	94.9
15	152	10	26	10	32	6.6	17.1	6.6	30.3	21.1	69.5
16	...	18	20	23	50	....	....	....	....	....	82.0
17	160	13	12	20	36	8.1	7.5	12.5	28.1	22.5	80.0
18	224	29	39	30	49	12.9	17.4	13.4	43.7	21.8	50.0
19	300	32	28	14	17	10.7	9.3	4.7	24.7	5.7	23.0
20	124	14	22	25	48	11.3	17.7	20.1	49.1	38.7	78.7
21	79	13	10	10	30	16.4	12.6	12.6	41.6	37.9	90.9
22	322	50	42	43	93	15.5	13.0	13.3	41.8	28.9	68.9
23	137	22	15	21	26	16.0	10.9	15.3	32.2	19.0	44.8
No.....						22	22	22	22	22	23
Average.....						12.9	13.3	13.1	39.5	28.9	72.0
Median.....						13.1	12.9	13.1	41.1	30.1	75.0

TABLE 35.

## SUMMARY OF TABLES 28 TO 34 INCLUSIVE.

(a) average per cents.

(b) median per cents.

POPULATION GROUP (a)	% ENROLLMENT IS OF ENROLLMENT IN GRADES 1 TO 6						% ENROLLMENT 10-12 IS OF ENROLLMENT 7 TO 9		
	GRADES 7 TO 9			GRADES 10-12			7 TO 9		
	JUNIOR	DEP'TL	NON-DEP.	JUNIOR	DEP'TL	NON-DEP.	Jr.	DEP'TL	NON-DEP.
5,000— .....	41.9	38.9	39.5	25.7	28.7	28.9	56.1	73.7	72.0
5,000-19,000...	31.0	30.2	....	21.1	17.3	....	69.0	55.8	....
20,000 & +....	27.4	28.1	....	11.8	14.0	....	43.0	52.6	....
Total.....	....	....	....	....	....	....	58.3	63.9	72.0
(b) as above....	41.7	40.5	41.1	28.3	27.6	30.1	54.1	72.9	75.0
	32.1	28.4	....	22.3	14.2	....	67.6	54.3	....
	25.6	28.1	....	13.0	13.8	....	41.0	51.8	....
	....	....	....	....	....	....	57.5	62.4	75.0

Tables 28 to 35 show the per cent the 7th, 8th, 9th, 7th to 9th, and the 10th to 12th grade enrollments, respectively are of enrollments in grades 1 to 6 combined, for junior high schools, departmental schools, and non-departmental schools, and the per cent the enrollment in grades 10 to 12 is of the enrollment in grades 7 to 9.

Table 28 should be read: school No. 2 of the junior high school group has enrollments of 108, 16, 13, 24 and 41, respectively, in grades 7, 8, 9, 7 to 9, and 10 to 12; and the enrollments in grades 7, 8, 9, 7 to 9, and 10 to 12 are respectively 14.8 12.0, 22.2, 49.0, and 38.0 per cent of the enrollments in grades 1 to 6 combined; and the enrollments in grades 10 to 12 are 54.1 per cent of the enrollments in grades 7 to 9. Tables 29 to 34 inclusive are to be read in a similar manner.

Averages are computed by schools and not on the number of pupils in all schools combined as the latter gives undue weight to the relatively large school. It is comparative results we are seeking. All non-departmental schools are in cities and towns of 5,000 population or less.

A comparison of average results from the three types of schools when classified according to the size of the towns or cities in which located shows that in cities of less than 5,000 population the per cents of enrollments in grades 7, 8, or 9 are variable within narrow limits for the three types, no one type maintaining the lead for all three grades. The enrollments for grades 7, 8 and 9 combined are 41.9%, 38.9%, and 39.5% of enrollments in grades 1 to 6 respectively for junior, departmental, and non-departmental schools. The advantage seems to be with the junior schools. The differences are small but have more significance when we



consider that reorganization has taken place very recently in these schools. If medians be considered the corresponding per cents are 41.7, 40.5, and 41.1, the advantage still being with the junior group.

The per cents of enrollments in grades 10 to 12 are 25.7, 28.7, and 28.9 of enrollments in grades 1 to 6 respectively for the three types of schools in order as above, the junior group being below the others by about the same amount as it was above in grades 7 to 9. The corresponding per cents for medians are 28.3, 27.6, and 30.1 respectively. The low average for the senior high school enrollments in the junior type schools is due to the fact that one school, No. 15, is just establishing a four year course and had at the time data were collected but 6% as many pupils enrolled in grades 10 to 12 as in grades 1 to 6. This lowers the average of the entire group by 3%. The median would seem to be the more reliable index of conditions in this case, and if this is used the junior group schools are superior to departmental schools in retention thru the senior high school in cities of this class. The fact that junior organization is of so recent date in practically all these schools may easily account for no marked superiority of these schools over departmental schools in retention in the senior high school.

In cities of this class the junior type schools have a lower ratio of enrollments in grades 10 to 12 to enrollments in grades 7 to 9 than have either of the other groups. The per cents for the junior, departmental, and non-departmental groups are respectively 56.1, 73.7, and 72.0. The use of this ratio as a measure of retention as is done by Douglass and others may be very misleading, especially in schools where the reorganization is just beginning to be felt. Naturally this influence will be apparent first in the junior high school grades and the greater the influence here the lower will be the ratio of senior to junior high school enrollments until the influence has had time to work itself fully thru the entire high school. On the other hand some high schools receive into the eleventh and twelfth grades many pupils from neighboring 1, 2 or 3 year, or from 4 year certified schools, in which case the ratio of senior to junior enrollments is high as compared with that in other schools where the normal conditions of retention are really better.

For cities of from 5,000 to 19,000 population the per cents the enrollments in grades 7 to 9 are of enrollments in grades 1 to 6

are 31.1 and 30.2 respectively for junior and departmental schools; and the enrollments in grades 10 to 12 are 21.1% and 17.3% of the enrollments in grades 1 to 6 respectively for the same school groups; and enrollments in grades 10 to 12 are 69% and 55.8% of the enrollments in grades 7 to 9 of the same schools. In this group of cities the junior type schools have a clear advantage over departmental schools in all three comparisons for measuring retention. If median results be used the junior schools maintain their advantage in all comparisons, the per cents corresponding to the averages above being, 32.1, 28.4, 22.3, 14.2, 67.6, and 54.3, respectively.

For cities of the 20,000 and more population class the departmental schools have a slightly higher per cent of enrollments in grades 7 to 9 and in 10 to 12 than the junior type schools, and also a higher ratio of enrollments in grades 10 to 12 as compared with grades 7 to 9. The per cents in order as for the last comparison are, 27.4, 28.1, 11.8, 14.0, 43.0, and 52.6 for junior and departmental schools. The median results are 25.6, 28.1, 13.0, 13.8, 41.0, and 51.8, respectively. The best results would naturally be anticipated for the junior type schools in the larger cities where differentiated opportunities can best be provided, but it is here that the departmental schools excel most the junior schools.

The above data show that the junior type schools are superior to departmental schools in power of retention as measured by the per cent of enrollments in junior and senior school grades as compared with enrollments in grades 1 to 6 in schools in cities of less than 20,000 population and slightly inferior in cities of 20,000 and more population.

Other facts that are apparent from these tables are that the per cent the enrollments in both junior and senior high school grades is of enrollments in grades 1 to 6 decreases as we pass from the smaller towns and cities to the larger, and that in both junior and departmental schools in cities of less than 20,000 9th grade enrollments are greater than in grade eight. Both of these conditions are to be accounted for, probably, by the fact that the smaller school corporation draws many pupils from surrounding rural areas in the upper grammar grades and especially in the high school. In cities of 20,000 and more population 9th grade enrollments are less than in the 8th in both junior and departmental schools.

Douglass<sup>5</sup> reports for 34 junior type schools an enrollment of 59 in the senior high school for every 100 in the junior high school (grades 7 to 9 inclusive). Table 35 (a) shows that for the 28 junior type schools included in this table, under the last column heading, there are 58.3 pupils enrolled in grades 10 to 12 for every 100 in grades 7 to 9, but when the enrollments are averaged for the 33 departmental schools for the same grades there are 63.9 pupils enrolled in grades 10 to 12 for every 100 in grades 7 to 9. The limitations of this method of measuring retention have been noted above.

The measurement of retention in terms of enrollments is open to the objection that it conceals increases or decreases in school enrollments due to increasing or declining city population. Thus a school in a rapidly growing community may have a large lower grade enrollment and a small enrollment in the grammar grades and high school, which causes it to appear to have a very low retentive power, while as a matter of fact the reverse may be true. Also, as previously noted, certain schools may have unusually high enrollments in upper high school grades because of transfer from two and three year high schools in the surrounding territory. However where we are comparing several schools of one type and class with several of another type but of the same city class, as we are in this investigation, the objection noted above is largely removed as we are measuring group tendencies rather than individual schools. We have already disposed of another objection by dividing our schools according to the size of the cities in which they are located. It would be desirable to have enrollments by sex to note what type of organization, junior or departmental, makes the stronger appeal to one sex or the other. As many of the schools reported total enrollments only and not boys and girls separately, total enrollment data only have been used in this section of my report. Schools were asked to report enrollment data for 1911 also that changes in enrollments and retention over a period of years might be ascertained and its relation to any particular type of organization noted, but very few schools submitted data relative to this item, so few that the data are valueless for comparative purposes.

<sup>5</sup> Douglass, A. A. *The Junior High School*. XVth Year Book of National Society for the Study of Education. 1916, part III. p. 104.



b. *Retention Measured in Terms of High Sixth Grade Pupils Retained in the School System Thru Half Years of Attendance.*

In view of the limitations indicated above for measuring retention in terms of present enrollments, other data were collected which, it was thought, would afford a better index of retention than the method previously used. For this purpose data have been collected from several schools showing the high sixth grade enrollments for the second semester of the school years 1907-8 and 1912-13, boys and girls being listed separately. The data collected show exactly how many of the pupils enrolled in each of these groups were retained in the school system 1, 2, 3, 4, 5 and 6 half years; also how many of each of the originally enrolled pupils made a school advancement of 1, 2, 3, 4, 5 and 6 half years for each date group. From these data the per cent of retention thru each number of half years from 1 to 6 has been computed for junior and departmental schools separately for each date and for boys, girls and totals. Junior and departmental schools are then compared as to attendance retention (half years in school) and progress retention (half years of advancement) for boys, girls, and totals and for both dates; and also as to the increase in the per cent of retention during the five year interval between the 1907-8 and the 1912-13 groups.

It is assumed that age-grade conditions and the extent of moving away from the school system are approximately the same at the two dates, 1907-8 and 1912-13, for any given school.

As conditions necessarily vary somewhat from school to school making for high or low retention at both dates, the increase in the per cent of retention between the two dates is perhaps a better index of improvement than is the actual per cent of retention at either date.

A clear advantage of this method of measuring retention is that it follows the records of certain definite pupils enrolled in a given system thru a certain number of years. Accordingly it determines the holding power of the school for these certain pupils regardless of whether the city is growing rapidly or slowly in population.

Obvious limitations of this method of investigation are: first, that pupils moving away from the school system in which they were enrolled as high sixth grade pupils are checked against this system on the negative account even though the child

leaves thru no dislike of school and frequently attends school in another system into whose jurisdiction he moves. Second, pupils moving into a district after passing the high sixth grade level and attending school there, frequently for several years, are not counted on the positive retention account of this school. In case the number of schools considered is sufficiently great the marked differences in individual schools, in the respects noted above, will be neutralized in the general tendencies of the group of schools, and it is essentially group tendencies with which we are concerned. The most obvious limitation of this phase of the investigation is the small number of schools from which data were secured.

Ten of the schools claiming junior high school organization date their junior organization from September 1914 or earlier. It is apparent that data from schools organized since that date would have little or no value for this comparison as the reorganization influence could not have influenced retention in grades 7, 8 and 9 from the second semester of 1912-13. If reorganization influences retention it should be apparent to some degree in schools reorganized before 1914, especially in view of the fact that the spirit of such a movement usually precedes its formal accomplishment by two or three years.

Data were solicited from these ten schools and twenty departmental schools of approximately similar size. Five of the ten junior type schools contributed the desired data as did also four of the departmental schools. A fifth departmental school supplied data for the 1912-13 group of pupils but its results are omitted from comparative averages and medians because growth in retention between the two dates cannot be determined for this school.

Inability to trace pupil records thru the years indicated was the chief cause of non-coöperation by all the schools of which the request was made. The data were collected during the months of April, May and June, 1917, and were compiled from the school records in the superintendent's office in each case by the superintendent or by his clerk under his direction. The data were collected in accordance with the directions indicated below, and no further checking has been attempted to verify their accuracy than to note whether the data sent in seemed within the bounds of reason.

## DIRECTIONS FOR TABULATING OR CHECKING RETENTION DATA.

"Indicate the name of the city and by whom the data were checked. Divide the tabulation sheet into five columns. In column 1 write a complete list of all boys enrolled in the high sixth grade of your schools during the second semester of the school year 1912-13. In column 2, opposite the name of each pupil in column 1, indicate the number of half years each pupil attended your schools below grade 9 after the date given in column 1. In column 3 indicate the number of half years of advancement each of these pupils received in your schools below grade 9 after the date indicated in column 1. In column 4 indicate the number of half years each of these pupils attended grades 9-12 inclusive after the date indicated in column 1. In column 5 indicate the number of high school credits completed by each of these pupils in grades 9-12 inclusive after the date indicated in column 1.

If a pupil has withdrawn from school during the term without completing the work of the term count his attendance as one-half of a year for the term in question.

A high school credit is to be given for a subject satisfactorily completed which has daily recitations for a half year. Four credits constitute a normal half year's work. Indicate fractional credits on a proportional basis.

Be sure to check over your high sixth grade list for the semester following the date given in column 1 to include any pupil who may not have been promoted to grade seven at the end of the semester for which the list was prepared.

Prepare similar lists for girls of the high sixth grade for the second semester of 1912-13 and also separate list for boys and girls for the second semester of the year 1907-8 for the same grade as above.

Compute the data for the 1912-13 groups to the end of the first semester in January, 1917."

Tables 37 to 40 show the retention of high sixth grade pupils thru each half year of attendance from 1 to 6 for junior and departmental schools for the dates of 1912-13 and 1907-8, and tables 41 and 42 show the gain or loss in the per cent of retention during the five year interval between these two date groups. Table 36 shows the enrollments in the high sixth grade for boys and girls separately and for both 1907-8 and 1912-13.

TABLE 36.  
HIGH SIXTH GRADE ENROLLMENTS.

SCHOOL	IN JUNIOR HIGH SCHOOLS						SCHOOL	IN DEPARTMENTAL SCHOOLS					
	1912-13			1907-8				1912-13			1907-8		
	B	G	T	B	G	T		B	G	T	B	G	T
3	42	37	79	31	17	48	2	21	22	43	21	22	43
10	42	24	66	32	24	56	11	39	32	71	40	32	72
22	78	62	140	77	90	167	16j	38	38	76	20	18	38
24	22	19	41	37	20	57	17	54	47	101	49	53	102
25	57	62	119	64	70	134	32	72	69	141	...	...	...

Note: In this and following tables B, G, T, means boys, girls, and totals respectively. This table is the base for computing per cents in the following tables.

Table 36 should be read: School 3 of the junior high school group had 42 boys, 37 girls, and a total of 79 pupils enrolled in the high sixth grade during the second semester of the year 1912-13, and 31 boys, 17 girls and a total of 48 pupils for the same semester in 1907-8.



TABLE 37.  
RETENTION OF PUPILS IN JUNIOR HIGH SCHOOLS THRU EACH NUMBER OF HALF YEARS FROM 1 TO 6. 1912-13.

SCHOOL	NUMBER OF HALF YEARS IN SCHOOL AND PER CENT RETENTION											
	1			2			3					
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
3	35	30	65	83.3	81.1	82.3	34	28	62	81.0	75.7	78.5
10	38	20	58	90.5	83.3	87.9	36	18	54	85.7	75.0	81.8
22*	71	54	125	91.0	87.1	89.3	63	43	106	80.7	69.3	75.7
24	17	15	32	77.3	79.0	78.1	17	15	32	77.3	79.0	78.1
25*	54	59	113	94.7	95.2	95.0	47	54	101	82.4	87.1	84.9
Av...	...	...	...	87.4	85.1	86.5	...	...	...	81.4	77.2	79.8
Med.	...	...	...	90.5	83.3	87.9	...	...	...	81.0	75.7	78.5

TABLE 37—Continued.

SCHOOL	NUMBER OF HALF YEARS IN SCHOOL AND PER CENT RETENTION											
	4			5			6					
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
3	27	15	42	64.3	40.5	53.2	22	10	32	52.4	27.0	40.5
10	30	14	44	71.4	58.3	66.7	22	10	32	52.4	27.0	40.5
22*	57	38	95	73.1	61.3	67.9	46	32	78	58.9	51.6	55.7
24	15	13	28	68.2	68.4	68.3	14	10	24	63.6	52.6	58.5
25*	33	39	72	57.9	62.9	60.5	28	32	60	49.1	51.6	50.4
Av...	...	...	...	67.0	58.3	63.3	...	...	...	55.3	44.9	50.7
Med.	...	...	...	68.2	61.3	66.7	...	...	...	52.4	51.6	55.7

\* Data for 1912-13 were computed to June, 1917, instead of to January, 1917, as directed.

Table 37 should be read: School 3 of the junior group had 35 boys, 30 girls, and a total of 65 pupils retained from the high sixth grade of the second semester of 1912-13 for one-half year. Reduced to per cents there were 83.3% boys, 81.1% girls and a total of 82.3% of all pupils retained one-half year or more. 52.4% boys, 27% girls and 40.5% of all combined were retained thru 6 half years of attendance. On the average 79.8% of all high sixth grade pupils were retained 1 year; 63.3%, 2 years; and 46.4%, 3 years.

Tables 38, 39 and 40 are to be read in a similar manner.

TABLE 38.  
RETENTION OF PUPILS IN JUNIOR HIGH SCHOOLS THRU EACH NUMBER OF HALF YEARS FROM 1 TO 6. 1907-8.

SCHOOL	NUMBER OF HALF YEARS IN SCHOOL AND PER CENT RETENTION											
	1			2			3			4		
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
3	23	10	33	74.2	58.8	68.8	23	10	33	74.2	58.8	68.8
10	26	21	47	81.3	87.5	83.9	23	18	41	71.9	75.0	73.2
22	69	84	153	89.6	93.3	91.6	59	63	122	76.6	70.0	73.1
24	25	16	41	67.6	80.0	71.9	23	13	36	62.2	65.0	63.2
25	62	67	129	96.9	95.7	96.2	51	62	113	79.7	88.6	84.3
Av...	...	...	...	81.9	83.1	82.5	...	...	...	72.9	71.5	72.5
Med.	...	...	...	81.3	87.5	83.9	...	...	...	74.2	79.0	73.1

TABLE 38—Continued.

SCHOOL	NUMBER OF HALF YEARS IN SCHOOL AND PER CENT RETENTION											
	4			5			6			7		
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
3	12	8	20	38.7	47.1	41.6	10	8	18	32.2	47.1	37.5
10	20	14	34	62.5	58.3	60.7	13	7	20	40.6	29.2	35.7
22	42	44	86	54.5	48.9	51.5	30	36	66	38.9	40.0	39.5
24	17	11	28	45.9	55.0	49.1	14	10	24	37.8	50.0	42.1
25	38	44	82	59.4	62.9	61.3	33	33	66	51.6	47.1	49.2
Av...	...	...	...	52.2	54.4	52.8	...	...	...	40.2	42.7	40.8
Med.	...	...	...	54.5	55.0	51.5	...	...	...	38.9	47.1	39.5



TABLE 39.  
RETENTION OF PUPILS IN DEPARTMENTAL SCHOOLS THRU EACH NUMBER OF HALF YEARS FROM 1 TO 6. 1912-13.

SCHOOL	NUMBER OF HALF YEARS IN SCHOOL AND PER CENT RETENTION									
	1		2		3		4		5	
	B	T	%B	%T	B	T	%B	%T	B	T
2*	20	37	95.2	77.3	86.0	19	16	35	90.5	72.7
11	36	65	92.3	90.6	91.5	33	28	61	84.6	87.5
16j	32	34	66	84.2	89.5	30	31	61	79.0	81.6
17	49	41	90	90.7	87.3	46	38	84	85.2	80.9
32+	64	121	88.9	82.6	85.8	64	57	121	88.9	82.6
Av...	...	...	90.6	86.2	88.4	...	...	84.6	80.7	82.8
Med.	...	...	91.5	88.4	88.0	...	...	84.9	80.3	82.5

TABLE 39—Continued.

SCHOOL	NUMBER OF HALF YEARS IN SCHOOL AND PER CENT RETENTION									
	4		5		6		7		8	
	B	T	%B	%T	B	T	%B	%T	B	T
2*	18	32	85.7	63.6	74.4	16	12	28	76.2	54.5
11	24	50	61.5	81.3	70.4	20	26	46	51.3	81.3
16j	23	28	51	60.5	73.7	19	21	40	50.0	55.3
17	35	69	64.8	72.4	68.3	20	26	46	37.0	55.4
32+	49	91	68.1	60.9	64.5	38	27	65	52.8	39.1
Av...	...	...	68.1	72.8	70.0	...	...	53.6	61.6	57.0
Med.	...	...	63.2	73.1	69.4	...	...	50.7	55.4	58.7

\* Data for 1912-13 were computed to June, 1917, instead of January, 1917, as directed.

+ No report for 1907-8. Data are not used in the above averages and medians.

j organized as a junior high school during 1916-17.

TABLE 40.  
RETENTION OF PUPILS IN DEPARTMENTAL SCHOOLS THRU EACH NUMBER OF HALF YEARS FROM 1 TO 6. 1907-8.

SCHOOL	NUMBER OF HALF YEARS IN SCHOOL AND PER CENT RETENTION											
	1			2			3					
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
2	17	18	35	81.0	81.8	81.4	17	17	34	81.0	77.3	79.1
11	36	27	63	90.0	84.4	87.5	34	23	57	85.0	71.9	79.1
16j	18	17	35	90.0	94.4	92.1	17	16	33	85.0	88.9	86.8
17	37	38	75	75.5	71.7	73.5	36	33	69	73.5	61.3	67.7
Av.	..	..	..	84.1	83.1	83.6	..	..	..	81.1	74.9	78.2
Med.	..	..	..	85.5	83.1	84.4	..	..	..	83.0	74.6	79.1

TABLE 40—Continued.

SCHOOL	NUMBER OF HALF YEARS IN SCHOOL AND PER CENT RETENTION											
	4			5			6					
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
2	15	14	29	71.4	63.6	67.4	14	10	24	66.7	45.5	55.8
11	30	17	47	75.0	53.1	65.3	23	13	36	57.5	40.6	50.0
16j	11	10	21	55.0	55.5	55.3	9	5	14	45.0	27.8	36.9
17	24	22	46	48.9	40.5	45.1	16	16	32	32.6	30.2	31.3
Av.	..	..	..	63.1	53.2	58.3	..	..	..	50.5	36.0	43.5
Med.	..	..	..	63.2	54.3	60.3	..	..	..	51.3	35.4	43.7

TABLE 41.

PER CENT OF GAIN IN RETENTION IN YEARS OF ATTENDANCE BETWEEN THE 1907 AND 1912-13 GROUPS IN JUNIOR HIGH SCHOOLS.

SCHOOL	PER CENT GAIN IN RETENTION BY HALF YEARS											
	1			2			3			4		
	B	G	T	B	G	T	B	G	T	B	G	T
3	9.1	22.3	13.5	6.8	16.9	9.7	18.3	-10.2	6.1	25.6	-6.6	11.6
10	9.2	-4.2	4.0	13.8	0.0	8.6	17.7	0.0	11.5	8.9	0.0	6.0
22	1.4	-6.2	-2.3	4.1	-0.7	2.6	8.1	6.0	7.9	18.6	12.4	16.4
24	9.7	-1.0	6.2	15.1	13.5	14.9	16.8	13.4	15.7	22.3	13.4	19.2
25	-2.2	-0.5	-1.2	2.7	-1.5	0.6	-5.4	-3.7	-4.5	-1.5	0.0	-0.8
Av.	5.4	2.1	4.0	8.5	5.6	7.3	11.1	1.1	7.3	15.2	3.8	10.5
Med.	9.1	-4.2	4.0	6.8	0.0	8.6	16.8	0.0	7.9	18.7	0.0	11.6
										15.1	2.2	9.6
										20.0	4.5	11.4
										20.0	4.0	10.8
										20.2	-20.1	3.0
										9.2	12.5	10.8
										20.0	11.6	16.2
										20.0	11.9	16.5
										21.3	2.6	14.0
										-1.5	4.0	1.4

TABLE 42.

PER CENT OF GAIN IN RETENTION IN YEARS OF ATTENDANCE BETWEEN THE 1907-8 AND 1912-13 GROUPS IN DEPARTMENTAL SCHOOLS.

SCHOOL	PER CENT GAIN IN RETENTION BY HALF YEARS											
	1			2			3			4		
	B	G	T	B	G	T	B	G	T	B	G	T
2	14.0	-4.5	4.6	9.5	-4.6	2.6	14.3	0.0	7.0	9.5	9.0	9.3
11	2.3	6.2	4.0	-0.4	15.6	6.8	-8.3	25.1	6.5	-13.5	28.2	5.1
16j	-5.8	-4.9	-5.2	-6.0	-7.3	-6.5	18.7	15.2	17.1	5.5	18.2	11.8
17	13.4	15.6	15.6	11.7	19.6	15.5	18.7	22.4	20.4	15.9	31.9	23.2
Av.	6.0	3.1	4.8	3.7	5.8	4.6	9.7	14.0	11.7	4.6	19.6	11.8
Med.	5.5	0.9	4.3	4.5	5.5	4.7	14.1	18.8	11.8	9.9	23.2	9.4
										3.2	25.9	12.0
										4.7	26.8	12.0
										0.9	26.3	12.5
										14.3	9.0	11.6
										-1.3	31.3	13.3
										-0.6	24.8	11.8
										8.2	3.1	27.9
										12.0	3.9	23.3

Note: The minus sign preceding a number indicates a loss.



Table 41 should be read: in school 3 there is a gain in retention thru one-half year of 9.1% for boys, 22.3% for girls and 13.5% for all pupils of the high sixth grade during the interval between the 1907-8 and the 1912-13 classes. On the average for the five schools there is a gain for all pupils of 7.3% thru 1 year (2 half years), 10.5% thru 2 years, and 9.1% thru 3 years.

Table 42 is to be read in like manner.

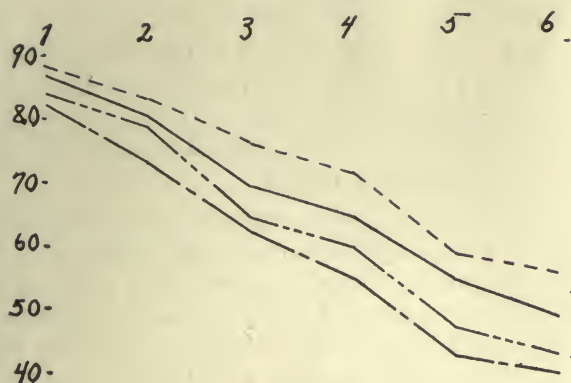


CHART 4.

Retention in terms of attendance beyond the high sixth grade, based on tables 37 to 40 inclusive.

Numbers at top represent half years; and numbers at the left, the per cent of high sixth pupils retained.

— and ——— junior schools.

— and ——— departmental schools.

Upper pair of lines, 1912-13 groups.

Lower pair of lines, 1907-8 groups.

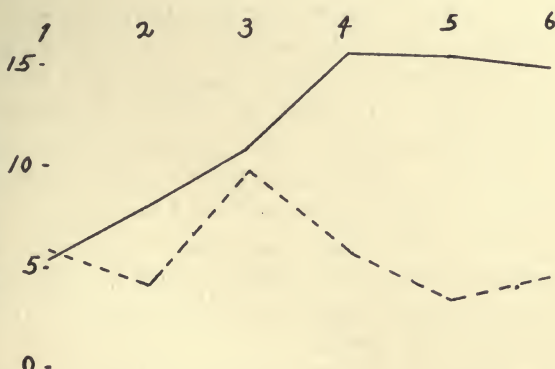


CHART 5.

Gain in attendance retention by boys between the dates 1907-8 and 1912-13, based on tables 41 and 42.

Numbers at top represent half years.

Numbers at left represent per cent of gain.

— junior schools.  
- - - departmental schools.

Table 37 shows that for the 1912-13 group in junior high schools on the average 4.2% more boys than girls were retained thru 1 year beyond the high sixth grade, that 8.7% more boys than girls were retained thru 2 years, and 7.8% more boys than girls were retained thru 3 years. Table 38 shows that 5 years earlier in these same schools 1.4% more boys than girls were retained thru 1 year, 2.2% more girls than boys were retained thru 2 years, and 3.9% more girls than boys were retained thru 3 years beyond the high sixth grade. In the junior schools the boys made marked gains as compared with the girls during the 5 year interval indicated in table 41.

Tables 39, 40 and 42 show corresponding data for the departmental schools. Table 39 shows that for the 1912-13 group 3.9% more boys than girls were retained thru 1 year, 4.7% more girls than boys were retained thru 2 years, and 7.6% more girls than boys were retained thru 3 years beyond the high sixth grade. Table 40 shows that for the 1907-8 group 6.2% more boys than girls were retained thru 1 year, 10% more boys than girls thru 2 years, and 10.5% more boys than girls were retained thru 3 years beyond the high sixth grade. Table 42 shows that there was a decided increase in retention in departmental schools during the 5 year interval but that the marked increase was with the girls who surpass the boys in retention at the latter date. This condition is directly contrary to the tendency in the junior type schools where the boys have the higher retention at the latter date although starting with the lower record 5 years before.

A comparison of the averages of tables 37 and 39 shows that for all pupils of the 1912-13 group the departmental schools have a 3% higher retention than the junior schools thru 1 year (82.8% to 79.8%), a 7% higher retention thru 2 years (70% to 63.3%), and a 7% higher retention thru 3 years (53% to 46.4%).

When these tables are compared for the per cent of boys retained we find the departmental schools 3% higher thru 1 year, 1% higher thru 2 years, and both equal thru 3 years beyond the high sixth grade.

Comparison of the averages of tables 41 and 42 for all pupils shows the junior type schools to have a 3% greater increase in retention than the departmental schools thru 1 year (7.3% to 4.6%), a 1% smaller increase thru 2 years (10.5% to 11.8%), and a 4% smaller increase thru 3 years (9.1% to 12.7%).



When tables 41 and 42 are compared for boys only the junior schools have a 5% greater increase in retention than the departmental schools thru 1 year (8.5% to 3.7%), a 10% greater increase thru 2 years (15.2% to 5.6%), and a 10% greater increase thru 3 years (13.8% to 3.9%).

As measured in terms of attendance retention of all pupils (boys and girls) of the 1912-13 group the departmental schools are superior to the junior schools, but as measured in terms of gain in retention by boys during the 5 year interval the junior schools have a distinct superiority.

The 1907-8 data in my possession show retention thru the senior high school also, but as the 1912-13 pupils have not yet reached the upper high school grades these data have no comparative value for this study, and so are omitted.

The fact that 2 of the junior and 1 of the departmental schools computed their data to June 1917 instead of January 1917 as directed has no effect on the data submitted in the preceding tables as more than three years, the period for which the tables were designed, had elapsed at either of the dates, January or June.

The foregoing tables exhibit data relative to retention in terms of half years of attendance. The material collected from these schools enables us to compare junior and departmental schools as to retention in terms of half years of progress thru the school system. Tables 43 to 46 indicate retention thru half years of progress for both junior and departmental schools for the 1907-8 and the 1912-13 groups, and tables 47 and 48 show the gain or loss per cent in progress retention during the 5 year interval.

TABLE 43.  
RETENTION OF PUPILS IN JUNIOR HIGH SCHOOLS AS MEASURED BY HALF YEARS OF PROGRESS BEYOND THE HIGH SIXTH GRADE, 1912-13.

SCHOOL	NUMBER OF HALF YEARS' PROGRESS AND PER CENT RETENTION											
	1			2			3			T		
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
3	34	30	64	81.0	81.1	81.0	29	24	53	69.0	64.9	67.1
10	38	18	56	90.5	75.0	84.9	35	18	53	83.3	75.0	80.3
22*	67	51	118	85.9	82.2	84.3	62	42	104	79.5	67.7	74.3
24	17	15	32	77.3	79.0	78.1	15	15	30	68.2	79.0	73.2
25*	53	58	111	93.0	93.5	93.3	44	53	97	77.2	85.5	81.5
Av...	...	...	...	85.5	82.2	84.3	...	...	...	75.4	74.4	75.3
Med.	...	...	...	85.9	81.1	84.3	...	...	...	77.2	75.0	74.3

TABLE 43—Continued.

SCHOOL	NUMBER OF HALF YEARS' PROGRESS AND PER CENT RETENTION											
	4			5			6			T		
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
3	26	14	40	61.9	37.8	50.6	14	8	22	33.3	21.6	27.8
10	22	13	35	52.4	54.2	53.0	13	9	22	31.0	37.5	33.3
22*	56	37	93	71.8	59.6	66.4	40	27	67	51.3	43.5	47.9
24	15	13	28	68.2	68.4	68.3	13	9	22	59.1	47.4	53.6
25*	33	38	71	57.9	61.3	59.6	35	41	76	42.1	50.0	46.2
Av...	...	...	...	62.4	56.3	59.6	...	...	...	43.4	40.0	41.8
Med.	...	...	...	61.9	59.6	59.6	...	...	...	42.1	43.5	46.2

\* Data for 1912-13 were computed to June, 1917, instead of January, 1917, as directed.

Table 43 should be read: in school 3 of the junior group 34 boys and 30 girls of those who were enrolled in the high sixth grade during the second semester of 1912-13 remained in school to complete another half year of work. On the average for the five schools 75.3% of all pupils who were enrolled in the high sixth grade made 1 year of advancement in school thereafter; 59.6%, 2 years; and 34.2%, 3 years.

Tables 44, 45, and 46 should be read in like manner.



TABLE 44.  
RETENTION OF PUPILS IN THE UNION HIGH SCHOOL AS MEASURED BY HALF YEARS OF PROGRESS BEYOND THE HIGH SIXTH GRADE.  
1907-8.

SCHOOL	NUMBER OF HALF YEARS' PROGRESS AND PER CENT RETENTION											
	1			2			3					
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
3	23	11	34	74.2	64.7	70.8	15	10	25	48.4	58.8	52.1
10	22	18	40	68.8	75.0	71.4	20	16	36	62.5	66.7	64.3
22	66	79	145	85.7	87.8	86.8	57	62	119	74.0	68.9	71.3
24	24	14	38	64.9	70.0	66.7	22	13	35	59.5	65.0	61.4
25	60	66	126	93.7	94.3	94.0	50	56	106	78.1	80.0	79.1
Av..	..	..	..	77.5	78.4	77.9	..	..	..	64.5	67.9	65.6
Med.	..	..	..	74.2	75.0	71.4	..	..	..	62.5	66.7	64.3

TABLE 44—Continued.

SCHOOL	NUMBER OF HALF YEARS' PROGRESS AND PER CENT RETENTION											
	4			5			6					
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
3	10	8	18	32.2	47.1	37.5	7	7	14	22.5	41.2	29.2
10	16	11	27	50.0	45.8	48.2	11	6	17	34.4	25.0	30.4
22	40	40	80	51.9	44.4	47.9	25	32	57	32.5	35.5	34.1
24	17	11	28	45.9	55.0	49.1	14	10	24	37.8	50.0	42.1
25	36	43	79	56.2	61.4	59.0	29	32	61	45.3	45.7	45.5
Av..	..	..	..	47.2	50.7	48.3	..	..	..	34.5	39.5	36.3
Med.	..	..	..	50.0	47.1	48.2	..	..	..	34.4	41.2	34.1

TABLE 45.

RETENTION OF PUPILS IN DEPARTMENTAL SCHOOLS AS MEASURED BY HALF YEARS OF PROGRESS BEYOND THE HIGH SIXTH GRADE, 1912-13.

SCHOOL	NUMBER OF HALF YEARS' PROGRESS AND PER CENT RETENTION											
	1				2				3			
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
2*	20	17	37	95.2	77.3	86.0	19	16	35	90.5	72.7	81.7
11	35	29	64	89.7	90.6	90.1	30	28	58	76.9	87.5	81.7
16j	29	32	61	76.3	84.2	80.2	25	28	53	65.8	73.7	69.7
17	46	40	86	85.2	85.1	85.2	40	35	75	74.1	74.5	74.3
32+	63	54	117	87.5	78.2	83.0	61	53	114	84.7	76.8	80.9
Av..	..	..	..	86.6	84.3	85.4	..	..	..	76.8	77.1	76.9
Med.	..	..	..	87.5	84.7	85.6	..	..	..	75.5	74.1	78.0

TABLE 45—Continued.

SCHOOL	NUMBER OF HALF YEARS' PROGRESS AND PER CENT RETENTION											
	4				5				6			
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
2*	18	14	32	85.7	63.6	74.4	16	12	28	76.2	54.5	65.1
11	24	26	50	61.5	81.3	70.4	19	23	42	48.7	71.9	59.1
16j	21	25	46	55.3	65.8	59.0	14	17	31	36.8	44.7	40.8
17	26	30	56	48.1	63.8	55.5	13	23	36	24.1	49.0	35.6
32+	47	40	87	65.3	58.0	61.7	21	19	40	29.2	27.5	28.4
Av..	..	..	..	62.7	68.6	64.8	..	..	..	46.5	55.0	50.2
Med.	..	..	..	58.4	64.8	64.7	..	..	..	42.8	51.8	49.9

\* Data were computed to June, 1917, instead of January, 1917, as directed.

j Reorganized as a junior high school in 1916-17.

+ Data not given for 1907-8 and results not included in computing averages and medians.

TABLE 46.

RETENTION OF PUPILS IN DEPARTMENTAL SCHOOLS AS MEASURED BY HALF YEARS OF PROGRESS BEYOND THE HIGH SIXTH GRADE, 1907-8.

SCHOOL	NUMBER OF HALF YEARS' PROGRESS AND PER CENT RETENTION											
	1			2			3					
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
2	17	18	35	81.0	81.8	81.4	17	17	34	81.0	77.3	79.1
11	35	24	59	87.5	75.0	82.0	30	19	49	75.0	59.4	68.1
16j	18	17	35	90.0	94.4	92.1	15	14	29	75.0	77.8	76.3
17	35	37	72	71.4	69.8	70.6	31	33	64	63.3	62.3	62.7
Av...	...	...	...	82.5	80.3	81.5	...	...	...	73.6	69.2	71.6
Med.	...	...	...	84.3	78.4	81.7	...	...	...	75.0	69.8	72.2

TABLE 46—Continued.

SCHOOL	NUMBER OF HALF YEARS' PROGRESS AND PER CENT RETENTION											
	4			5			6					
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
2	15	14	29	71.4	63.6	67.4	13	10	23	61.9	45.5	53.5
11	25	16	41	62.5	50.0	56.9	18	12	30	45.0	37.5	41.7
16j	11	10	21	55.0	55.5	55.3	9	4	13	45.0	22.2	34.2
17	19	19	38	38.8	35.8	37.3	12	14	26	24.5	26.4	25.5
Av...	...	...	...	56.9	51.2	54.2	...	...	...	44.1	32.9	38.7
Med.	...	...	...	58.8	52.8	56.1	...	...	...	45.0	32.0	38.7

SCHOOL	NUMBER OF HALF YEARS' PROGRESS AND PER CENT RETENTION											
	7			8			9					
	B	G	T	%B	%G	%T	B	G	T	%B	%G	%T
2	15	14	29	71.4	63.6	67.4	13	10	23	61.9	45.5	53.5
11	25	16	41	62.5	50.0	56.9	18	12	30	45.0	37.5	41.7
16j	11	10	21	55.0	55.5	55.3	9	4	13	45.0	22.2	34.2
17	19	19	38	38.8	35.8	37.3	12	14	26	24.5	26.4	25.5
Av...	...	...	...	56.9	51.2	54.2	...	...	...	44.1	32.9	38.7
Med.	...	...	...	58.8	52.8	56.1	...	...	...	45.0	32.0	38.7



TABLE 47.

PER CENT OF GAIN IN RETENTION IN TERMS OF YEARS OF PROGRESS IN JUNIOR HIGH SCHOOLS BETWEEN THE 1907-8 AND THE 1912-13 GROUPS.

SCHOOL	PER CENT GAIN IN RETENTION BY HALF YEARS											
	1		2		3		4		5		6	
	B	T	B	T	B	T	B	T	B	T	B	T
3	6.8	16.4	10.2	20.6	6.1	15.0	32.1	18.2	29.7	-9.3	13.1	10.8
10	21.7	0.0	13.5	20.8	8.3	16.0	11.3	0.0	7.5	2.4	8.4	4.8
22	0.2	-5.6	-2.5	5.5	-1.2	3.0	9.4	2.8	6.8	19.9	15.2	18.5
24	12.4	9.0	11.4	8.7	14.0	11.8	16.8	13.4	22.3	13.4	19.2	21.3
25	-0.7	-0.8	-0.7	-0.9	5.5	2.4	2.0	0.4	1.2	1.7	-0.1	0.6
Av...	8.1	3.8	6.4	10.9	6.5	9.6	14.3	3.1	10.0	15.2	5.5	11.2
Med.	6.8	0.0	10.2	8.7	6.1	11.8	11.3	0.4	7.5	19.9	8.4	13.1

TABLE 48.

PER CENT OF GAIN IN RETENTION IN TERMS OF YEARS OF PROGRESS IN DEPARTMENTAL SCHOOLS BETWEEN THE 1907-8 AND THE 1912-13 GROUPS.

SCHOOL	PER CENT GAIN IN RETENTION BY HALF YEARS											
	1		2		3		4		5		6	
	B	T	B	T	B	T	B	T	B	T	B	T
2	14.2	-4.5	4.6	9.5	-4.6	2.3	14.3	0.0	7.0	14.3	9.0	11.6
11	2.2	8.6	8.1	1.9	28.1	13.6	1.0	31.3	13.5	3.7	34.4	17.4
16j	-13.7	-7.9	-11.9	-9.2	-4.1	-6.6	9.2	-0.3	10.3	3.7	-8.2	22.5
17	13.8	14.5	14.6	10.8	12.2	11.6	8.0	24.7	16.4	9.3	28.0	18.2
Av...	4.1	2.7	3.9	3.3	7.9	5.3	6.2	15.4	10.4	6.1	17.4	10.6
Med.	8.0	2.0	6.4	5.7	4.0	7.1	8.1	17.3	11.3	5.1	19.1	10.2

Note: The minus sign preceding a number indicates a loss.

Table 47 should be read: in school 3 there is a gain in retention thru one-half year of 6.8% for boys, 16.4% for girls and 10.2% for all pupils during the five year interval between the 1907-8 and 1912-13 groups. On the average for the five schools there is a gain for all pupils of 9.6% thru 1 year, 11.2% thru 2 years, and 2.0% thru 3 years, etc.

Table 48 is to be read in like manner.

A comparison of averages of tables 43 and 45 shows that for all pupils the departmental schools have a 1% higher progress retention than junior schools thru 1 year (76.9% to 75.3%), a 5% higher retention thru 2 years (64.8% to 59.8%), and an 8% higher retention thru 3 years (42.4% to 34.2%). The departmental schools have a superior retention thru all three years beyond the high sixth grade.

When these tables are compared with respect to the per cent of boys retained we find the departmental schools 1% higher thru 1 year, equal thru 2 years, and 7% higher thru 3 years.

A comparison of averages of tables 47 and 48 for all pupils shows a 4% greater gain in retention for junior than for departmental schools thru 1 year (9.6% to 5.3%), a 1% greater gain thru 2 years (11.2% to 10.6%), and a 5% smaller gain thru 3 years (2% to 6.8%).

When comparisons are made for boys only from tables 47 and 48 (averages) the junior schools have an 8% greater gain than departmental schools thru 1 year (10.9% to 3.3%), a 9% greater gain thru 2 years (15.2% to 6.1%), and a 4% greater gain thru 3 years (4.4% to .7%).

As measured in terms of retention of all pupils of the 1912-13 group the departmental schools are superior, but measured in terms of gain in retention of boys during the 5 year interval the junior high schools have a distinct advantage, as they also have in terms of gain in retention of all pupils thru 1 and 2 years.

The fact that 2 junior and 1 departmental school computed the 1912-13 group data to June 1917 instead of to January 1917 as directed may have a slight effect upon the results for the sixth half year as a few retarded pupils may have passed the sixth half year of work during the extra half year included by these schools. The fact that these errors were in both types of schools tends to neutralize the error as relates to group comparisons. From the number of retarded pupils who might affect the results as indicated, I estimate that the per cent of error for any school for the

sixth half year is not greater than 5 per cent and that any error in the group averages for the sixth half year is less than 2 per cent.

Tables 49, 50, 51 and 52 show the per cent of possible progress, the per cent acceleration, and the per cent retardation for junior and departmental schools for the high sixth grade groups of 1907-8 and 1912-13.



TABLE 49.  
PROGRESS THRU THE SEVENTH AND EIGHTH GRADES IN JUNIOR HIGH SCHOOLS BY THE HIGH SIXTH GRADE OF 1912-13.

SCHOOL	NO. HALF YEARS ATTENDANCE		NO. HALF YEARS PROGRESS		PER CENT OF POSSIBLE PROGRESS		% ACCELERATION ½ YEAR OR MORE		% RETARDATION ½ YEAR OR MORE						
	B	T	B	T	B	T	B	T	B	T					
3	136	103	239	95	85	180	69.8	82.5	75.3	2.4	0.0	1.3	38.1	40.5	39.2
10	149½	69	218½	126	63	189	84.4	91.3	86.5	0.0	4.2	1.5	38.1	20.8	31.8
22	265	199½	404½	243	171	414	91.7	85.7	89.1	0.0	0.0	0.0	19.2	21.0	20.0
24	65	56½	121½	62	56	118	95.4	99.1	97.1	0.0	0.0	0.0	9.1	0.0	4.9
25	175½	194½	370	165	190	355	94.0	97.7	95.9	5.3	4.8	5.0	21.1	9.7	15.1
Av.....	.....	.....	.....	.....	.....	.....	87.1	91.3	89.0	1.5	1.8	1.6	25.1	18.4	22.2
Med....	.....	.....	.....	.....	.....	.....	91.7	91.3	89.1	0.0	0.0	1.3	21.1	20.8	20.0

TABLE 50.  
PROGRESS THRU THE SEVENTH AND EIGHTH GRADES IN JUNIOR HIGH SCHOOLS BY THE HIGH SIXTH GRADE OF 1907-8.

SCHOOL	NO. HALF YEARS ATTENDANCE		NO. HALF YEARS PROGRESS		PER CENT OF POS- SIBLE PROGRESS		% ACCELERATION ½ YEAR OR MORE		% RETARDATION ½ YEAR OR MORE					
	B	T	B	T	B	T	B	T	B	T				
3	81½	43½	125	56	35	91	68.7	80.4	72.8	0.0	0.0	41.9	35.3	39.6
10	90½	72½	163	78	60	138	86.2	82.8	84.7	0.0	0.0	28.1	41.7	33.9
22	244	268	512	215	238	453	88.1	88.8	88.5	0.0	0.0	18.2	15.5	16.7
24	87	52½	139½	83½	49	132½	96.0	93.3	94.9	0.0	0.0	5.4	10.0	7.0
25	210½	229	439½	184	211	395	87.4	92.1	89.9	0.0	0.0	39.1	23.4	29.8
AV.....	.....	.....	.....	.....	.....	.....	85.3	87.5	86.2	0.0	0.0	26.5	25.2	25.4
Med.....	.....	.....	.....	.....	.....	.....	88.1	88.8	88.5	0.0	0.0	28.1	23.4	29.8

TABLE 51.  
PROGRESS THRU THE SEVENTH AND EIGHTH GRADES IN DEPARTMENTAL SCHOOLS BY THE HIGH SIXTH GRADE OF 1912-13.

SCHOOL	NO. HALF YEARS ATTENDANCE			NO. HALF YEARS PROGRESS			PER CENT OF POSSIBLE PROGRESS			% ACCELERATION ½ YEAR OR MORE			% RETARDATION ½ YEAR OR MORE		
	B	G	T	B	G	T	B	G	T	B	G	T	B	G	T
2	75½	61	136½	75	61	136	99.3	100.0	99.7	0.0	0.0	0.0	0.0	0.0	0.0
11	128½	113	241½	115	109	224	89.5	96.5	92.2	0.0	0.0	0.0	23.1	6.3	15.3
16j	127½	142½	270	99	112	211	77.6	78.6	78.1	0.0	0.0	0.0	36.8	50.0	43.4
17	188	154½	342½	145	137	282	77.1	88.7	82.3	3.7	6.4	5.0	48.2	17.0	33.7
Av.....	.....	.....	.....	.....	.....	.....	85.9	91.0	88.1	0.9	1.6	1.2	27.0	18.3	23.1
Med.....	.....	.....	.....	.....	.....	.....	83.6	92.6	87.3	0.0	0.0	0.0	28.9	20.6	24.6

TABLE 52.  
PROGRESS THRU THE SEVENTH AND EIGHTH GRADES IN DEPARTMENTAL SCHOOLS BY THE HIGH SIXTH GRADE OF 1907-8.

SCHOOL	NO. HALF YEARS ATTENDANCE			NO. HALF YEARS PROGRESS			PER CENT OF POSSIBLE PROGRESS			% ACCELERATION ½ YEAR OR MORE			% RETARDATION ½ YEAR OR MORE		
	B	G	T	B	G	T	B	G	T	B	G	T	B	G	T
2	65	64	129	65	64	129	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
11	150	95½	245½	117	75	192	78.0	78.5	78.2	0.0	0.0	0.0	50.0	43.8	47.2
16j	65½	60	125½	55	52	107	83.9	86.7	85.2	0.0	0.0	0.0	25.0	22.2	23.6
17	138	129½	267½	111	112	223	80.4	86.5	83.4	0.0	0.0	0.0	32.7	18.9	25.5
Av.....	.....	.....	.....	.....	.....	.....	85.6	87.9	86.7	0.0	0.0	0.0	25.5	21.2	24.1
Med.....	.....	.....	.....	.....	.....	.....	82.2	86.6	84.3	0.0	0.0	0.0	28.9	20.6	24.6

Table 49 should be read: in school 3 the 1912-13 group of boys had 136 half years of attendance in grades seven and eight which resulted in 95 half years of progress; their per cent of possible progress was 69.8%; 2.4% of these boys were accelerated one-half year or more during their progress thru grades 7 and 8; and 38.1% of them were retarded one-half year or more in the same grades, etc.

Tables 50, 51, 52 are to be read in like manner.

One-hundred per cent possible progress would be scored if every half year of attendance resulted in a half year of progress.

The two groups of schools, see tables 49 to 52 inclusive, show marked similarities in results. In both the girls have a slightly higher progress score than the boys, 4% more for the junior schools for the 1912:13 group and 5% for the departmental schools for the same date. The average for all pupils is 3% higher in 1912-13 than in 1907-8 for the junior schools and 2% higher for the departmental schools. On the average about 50% more boys than girls are retarded for both the 1907-8 and 1912-13 groups, and the retardation rate for seventh and eighth grade pupils is lowered during the 5 year interval by 3% in junior schools and 1% in departmental schools. Only 1 junior school, No. 25, shows a marked retardation improvement (14.7%), although No. 2 of the departmental schools shows neither retardation nor acceleration at either date. Department school No. 11, improved its retardation rate by 31.9% but schools 16j and 17 made poorer records at the later date by 19.8% and 8.2% respectively. But one school in each group at the later date appears to be securing even a small degree of acceleration for both boys and girls, although school No. 3 of the junior group shows a small per cent of acceleration for boys in 1912-13, and No. 10 of the junior schools, a small acceleration for girls for the same date. Neither group had a school showing any acceleration for the 1907-8 pupils.

The data of these tables warrant no claims of superiority for either type of organization, junior or departmental.

#### SUMMARY OF RETENTION FACTS.

As measured by enrollments the junior type schools have a higher per cent of retention than the non-junior schools in grades 7 to 9 and 10 to 12 in cities of less than 20,000 population, but have a slightly lower per cent of retention in cities of 20,000 and more population.



As measured by the per cent of high sixth grade pupils of the 1912-13 group retained thru half years of attendance the departmental schools are superior.

As measured by the relative per cent of boys of the 1912-13 group retained thru 1, 2 and 3 years the departmental schools are very slightly superior thru 1 and 2 years and equal thru 3 years.

As measured by the gain in retention for all pupils during the 5 year interval the junior schools have the higher record thru 1 year and the departmental schools thru 2 and 3 years.

As measured in terms of the gain in per cent of boys retained during the 5 year interval the junior schools have a distinct lead thru each of the three years.

As measured by the progress retention of the 1912-13 group the departmental schools are superior.

As measured by the progress retention of boys of the 1912-13 group the departmental schools are slightly superior.

As measured by the gain in progress retention of all pupils during the 5 year interval the junior schools are superior thru 1 and 2 years and the departmental schools thru 3 years.

As measured in terms of gain in progress retention by boys during the 5 year interval the junior schools are superior thru all three years.

These data give no support to the claim often advanced that junior high school organization promotes a superior retention of pupils as compared with other types of grammar grade organization. These data do, however, indicate a justification for the claim, frequently made, that junior high school organization makes an appeal to boys and retains them in greater numbers and for a longer time than do other types of grammar grade organization.

These data relative to attendance and progress retention, because of the small number of schools included in each group, are merely suggestive of tendencies rather than of definite conclusions.

Studies for comparison of retention, measured in terms of retention beyond the sixth grade, are not available. Van Denburg<sup>6</sup> and Dynes<sup>7</sup> have data of a partially similar nature applying to grades 9 to 12 inclusive, but as their per cents are computed

<sup>6</sup> Van Denburg, J. K. *Elimination of Students in Public Secondary Schools of New York City*, pp. 84-90.

<sup>7</sup> Dynes, J. J. *Relation of Retention and Elimination of Students from the High School*. *School Rev.* 22:396.

on the number of pupils who enroll in grade 9 only, it is impossible to reduce their data to comparable terms. Then, too, we are investigating more particularly the conditions in grades 7 to 9 inclusive while the major part of their data relates to grades 10 to 12.

## GENERAL SUMMARY.

1. Thirty-five Indiana public schools claimed junior high school organization in 1916, twenty-five of which were established in 1915 or later. Twelve of these schools are located in towns of 1,000 population or less and nine are in cities of 20,000 or more population.
2. Twenty-five superintendents and principals ranked the following four factors as chief in importance in junior high school organization, in order as given: (a) enriched subjects and courses of study; (b) provision for individual differences, including differentiated curricula, half yearly promotions, promotion by subject, class grouping on the basis of ability, and provision for flexible individual advancement; (c) revised or modified methods, of which the degree of departmentalization, employment of teachers with high school experience, supervised study, the use of the project plan in prevocational subjects, and the use of a common teaching staff for junior and senior schools are taken as indices; (d) exploration, guidance and social organization.
3. Junior high school standards in Indiana schools.
  - a. Programs of study. The typical Indiana junior high school offers the following average program in:
    - (1) Grade 7 (28 schools): English (6.2 periods a week) arithmetic (4.5), history (4.2), geography (2.7) physiology-hygiene (2), agriculture or manual training (2.1), domestic science (2.3), drawing and music each (1.5), German, 12 schools, (4), and an elective of foreign language (5) or practical arts (2 to 4) in approximately one-sixth the schools.
    - (2) Grade 8 (35 schools): English (5.6 periods a week), arithmetic (4.6), history and civics (4.6), general science (4) or geography-physiology-hygiene (3), domestic science or manual training or agriculture (2.6), drawing and music each (1.3), and an elective required in some, of foreign language (4 or 5) or other high school subject other than general science (4 or 5).
    - (3) Grade 9 (27 schools): Required-English (5 periods a week), algebra (5), foreign language, German or Latin (5). Elective-science—general science, botany, physical geography—(5), manual or domestic arts (5 double periods), drawing and music, in most schools, (1 or 2), physical training, in less than one-third the schools (2), commercial work including commercial arithmetic or bookkeeping or both, in about one-third the schools (5), industrial vocational courses, in about one-fifth the schools (5), ancient history, in about one-sixth the schools (5).
  - b. Relative to provision for individual differences, of 35 schools, 4 offer differentiated curricula to provide for well defined group interests, 22 promote half yearly, 32 promote by subject, 14 have accelerant and slow moving classes, and 34 make some provision for flexible individual advancement.



- c. Relative to indices of method modifications, there is a close approximation to high school standards in the degree of departmentalization, introduction of new methods, and general methods of instruction. On the average every pupil of grade 7 has 6 different teachers, grade 8, 5 teachers and grade 9, 4 teachers. Hence the degree of departmentalization is equivalent to that in the high school. In 17 schools the same teachers have charge of all classes in both senior and junior high schools, and in but 3 schools are there no senior and junior high schools teachers in common. Seventy-five and five-tenths per cent of junior high school teachers have had high school teaching experience. Thirty-one schools have supervised study, and 23, of 31 reporting, use the project method in whole or part in the prevocational subjects.
- d. With respect to exploration, guidance, and social organization, 22 of 26 schools reporting indicate some form of teacher adviser plan, 8 have systematic provision for educational or vocational guidance, 26 of 28 reporting, have one or more extra-class organizations, more commonly athletics and music, and 21, of 22 reporting, have an average of one assembly a week.
- e. Miscellaneous features.
  - (1) Grades included. Twenty-two include grades 7, 8 and 9; 9, grades 7 and 8; 2 grades 8 and 9; 1, grade 8; 1, grades 6, 7 and 8.
  - (2) Housing. Twenty-five schools have the grammar grades in the high school building; 5, separate but near the high school; and 5 with elementary grades, generally a separate floor of the building.
  - (3) Time distribution. The median length of the school term is 36 weeks and the average, 34.7 weeks. The median class period is 40 minutes and the average 44.4.
  - (4) Teacher data. For the average school the number of years of teacher training beyond the high school is 2.71; the average number of years of teaching experience, 8.6; the average per cent of college graduates 43.1; per cent of men teachers, 36 (median 40); and the average annual salary, \$735.
  - (5) Provision for over-age children. Four schools report definite provision; 13, very limited; and 16, no provision.

#### 4. Departmental school standards.

##### a. Subjects of study with time allotment.

- (1) Grade 8. English (12 periods a week), arithmetic (5), history and civics (4.9), geography or physiology-hygiene (3.2), domestic science or manual training or agriculture (2.2), music (1.7), drawing (1.2), and electives with grade 9 in 12 schools to a limited extent.

- (2) Grade 7. Approximately the same as in junior high schools with the exception of more time to formal English and practically no offerings in foreign language.
  - (3) Grade 9. Approximately the same as in the junior high schools.
  - b. Relative to provision for individual differences, no schools report differentiated curricula other than the minimum required by State Board rules in prevocational work in grades 7 and 8. Twenty-three report half yearly promotions; 11, promotion by subject; 8 accelerant and slow moving classes; and 18, limited provision for individual advancement.
  - c. Indices of method modification. Fourteen indicate provision for supervised study as a regular feature, and 6 in a limited degree; the degree of departmentalization is approximately the same as in the junior type schools; the project method is used in prevocational work in whole or in part in 25 schools; in 9 schools high schools teachers have charge of a part of the academic and all special subjects in the departmental school, in 8 no high school teachers teach any departmental classes, and in 17 they teach all or part of the special subjects in the grammar grades; and 37 per cent of departmental teachers have had high school teaching experience.
  - d. With respect to exploration, guidance, and social organization, 24 schools report some provision for a teacher adviser plan; 5 have systematic provision for educational or vocational guidance; and 26, of 29 reporting, have 1 or more extra-class organizations, athletics and musical predominating.
  - e. Miscellaneous features.
    - (1) Housing. In 13 schools grammar grades are in the high school building but do not use the same assembly or class rooms, and of the remaining 22, all but 4 are with elementary school pupils.
    - (2) Time distribution. The median length term is 36 weeks and the average, 35.5 weeks. The median length recitation period is 30 minutes and the average, 35.5 minutes.
    - (3) Teacher data. The average teacher training beyond the high school is 2.06 years; teaching experience, 10.4 years; per cent of college graduates, 12; per cent of men teachers, 25.5; and the average annual salary, \$650.
    - (4) Provision for over-age children in grammar grades. No schools report any definite provision; 12 report no provision; and 18 report a very limited provision, as occasionally, etc.
5. Comparison of departmental and junior schools.
- By a point system of scoring new and frequently advocated features of reorganization but 5 of the 35 junior high schools fall below the

arbitrarily determined junior high school standard, while but 6 departmental schools of the 35 score above this limit. By the scoring scheme a total of 26 to 29 points are given, distributed as follows: subject of study modifications, 10 points; provision for different interests and abilities, 4 to 7 points; social and advisory organization, 3 points; and miscellaneous features, 6 points. The adoption of the junior high school name seems to carry with it, in considerable degree, the adoption of the new standards. The median junior high school score is 66.7 and the median departmental school score 40.7

6. Measurement of some claimed advantages of and objections to the junior high school.
  - a. Costs. As measured by the median, seventh and eighth grade costs for instruction and supervision are about 6 per cent higher in the junior type schools than in departmental schools in cities of 5 000 and more population. In consolidated rural high schools of the junior type, organized on the six-six plan, the per capita cost for grades 7 to 12 inclusive is 6 per cent more than for non-junior schools under the same general conditions. In towns and villages of less than 5 000 population the per capita costs in grades 7 to 12 inclusive are from 15 to 20 per cent higher in the junior than in the departmental type schools.
  - b. Measurement of some school achievements in junior and non-junior schools in grade eight.

Ten six-six plan schools compared with 11 eight-four plan schools score 18 per cent lower (64% to 78%) on the Ayers' Spelling Scale, column T. The six-six plan schools give no definite time to spelling in grades 7 and 8 while the eight-four plan schools average 15 minutes daily. As measured by the Understanding of Sentences and the Visual Vocabulary Scales (Thorndike) the six-six type schools score about 3 per cent below the eight-four plan schools, and devote only from 40 to 50 per cent as much time to formal reading. The six-six type schools score 2 per cent higher on the Woody Multiplication Scale and devote a slightly less amount of time to the subject of arithmetic than do the eight-four type schools. The six-six plan schools give one-half the traditional English time to German (4-40 minute periods a week in grades 7 and 8). With the possible exception of spelling, the above stated facts do not appear to indicate that an excessive amount of time devoted to formal English, as in the eight-four plan schools, yields results proportional to the time spent. The six-six type schools, which have given one-half the usual English time of the grammar grades to a foreign language and still additional time to general science in grade 8, appear to be realizing approximately the same values in the fundamental grammar grade subjects as the non-junior schools and in addition, without doubt, are receiving very positive values from the study of foreign language and general science which these non-junior schools do not have in these grades.



c. Retention of pupils in school.

As measured by the per cent of enrollments in junior and senior high school grades as compared with the numbers in grades 1 to 6 neither the junior nor the departmental type school seems to have any advantage. The junior school has an apparent lead in schools in towns and cities of less than 20,000 population and the departmental schools in cities of 20,000 and more population. As measured by the per cent of the high sixth grade pupils retained thru a series of years attendance or thru years of progress the departmental schools have the higher score on the basis of all pupils retained, but the junior schools are markedly superior on the basis of the gain in the per cent of boys retained during the 5 year interval between the 1907-8 and the 1912-13 groups. In general, it is not apparent that these junior school data justify the claim, commonly made, that junior high schools retain a higher per cent of pupils than do schools of the non-junior type in the grammar and high school grades. The data do seem to justify the stated aims of some advocates of reorganization, namely, that the junior type school makes a superior appeal to boys as compared with the traditional organization

## APPENDIX.

I. A SURVEY OF THE SEVENTH, EIGHTH AND NINTH GRADE ORGANIZATION  
IN INDIANA PUBLIC SCHOOLS, A QUESTIONNAIRE.

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Name of city.....Information furnished by.....  
 Number of weeks in the school year.....Date of report.....

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## A. Type of organization.

## 1. Junior high school.

- a. Have you a special organization of grades 7 and 8 or 8 and 9 or 7, 8 and 9 to provide for greater differentiation of studies, easier transition to the high school, longer retention in school, earlier introduction of vocational work, etc., commonly called a junior high school? If so, how many such schools?
- b. If you have a junior high school, what is the attitude of teachers, pupils, and patrons toward the organization?
- c. What is the date of the first definite organization of your junior high school?
- d. What grades constitute this school?
- e. What are the reasons for the particular combination of grades in this school—the psychological and social needs of the children, the demands of subject matter and methods, or economic and building conditions?
- f. If you have not a junior high school according to the above definition do you contemplate the organization of one soon? Approximate date?

## 2. Departmental school (to be answered also by junior high schools.)

- a. Do you have departmental teaching (special teachers for each subject) in the grammar grades? In what subjects? In what grades?
- b. Is promotion by subject or by grade?
- c. In what other grades below the high school do you have departmental teaching and promotion by subjects?
- d. Date of the introduction of departmental teaching?  
Is promotion in these grammar grades yearly or half yearly?  
How many different teachers does a normal pupil have in any one term in grade 6...., 7...., 8...., 9....?
- g. Are any of these teachers the same as of the subjects in grades 9 to 12? How many? What subjects?
- h. If you have departmental teaching in grammar grades is each pupil assigned to some teacher or principal as a special adviser?

- i. Is any systematic attempt made to give educational or vocational guidance in these grades? If so, indicate how, briefly.
  - j. Do you have supervised study other than in the general assembly room for these grammar grades? If so, how many minutes per day per pupil?
- B. Conditions of housing, admission, grouping, attendance, enrollment, etc.
- 1. Housing and supervision.
    - a. Are grades 7 and 8, 8 and 9, or 7, 8 and 9 housed with the senior high school, with lower grades, in a separate building, or are all grades from 1 to 12 in the same building?
    - b. Are these grades in charge of the principal of the senior high school, the principal of an elementary school, or have they a separate principal of their own?
    - c. What per cent of the time of the principals of these grades is devoted to supervision? (Supervision is here defined to mean classroom visitation and conferences with teachers for the purpose of improving the quality of the work).
  - 2. Admission.
    - a. Is promotion in all subjects from the grade below the grades referred to necessary for admission to the seventh or beginning grade of your departmental or junior school?
    - b. Do you enroll here over-age pupils who have not completed the regular work of the earlier grades because of the greater benefit you think they will receive from this arrangement?
    - c. If this latter is true, how many such pupils were advanced to this department at the end of the last term?
  - 3. Grouping into classes.
    - a. In what classes (subjects) do you have pupils segregated as to sex? In what grades? What results or advantages are claimed for such segregation?
    - b. Do you form classes in these grades on the basis of mental ability (fast and slow moving classes)? About what per cent of pupils in the grammar grades are in such classes? What are the advantages of the plan?
    - c. To what extent do you group pupils into classes on the basis of vocational interests?
    - d. Indicate any other plan of classification you use in forming classes in these grades.
  - 4. Enrollment, attendance, failure.
    - a. Indicate the enrollment for the first semester of the year 1915-16 in the following grades: 1 to 6 inclusive, 7, 8, 9, 10, 11 and 12.



- b. Indicate the same for the first semester of the year 1910-11 if the data are available.
- c. Indicate the number of high school graduates, June 1915. Also for June 1910.
- d. What is the estimated population of your city, 1915?
- e. Indicate the average daily attendance for the first semester 1915-16 in grades 7, 8, and 9 separately.
- f. Indicate the per cent of failure for the first semester 1915-16 in grades 7, 8, and 9 separately. (If promotion is by grade divide the number of pupils failing by the number of pupils enrolled; if by subjects, divide the number of subject failures by the number of subject enrollments).

C. Teachers in grammar grades.

1. Number.

- a. How many teachers are employed in your union high school, departmental school or grammar grades, women? men? (Count fractional teacher where time is divided between the grades in question and other grades.)

2. Training.

- a. What is your minimum requirement for teachers in these grades as to the number of years of normal school or collegiate training?
- b. Is this average above that for teachers in grades 1 to 6?
- c. In these grammar grades how many college graduates? How many with 2 years of college training? How many are graduates from a 3 year normal school?

3. Teaching experience.

- a. How many years of teaching experience do you require before placing a teacher in charge of these grammar grade classes?
- b. What is the average number of years of teaching experience for all teachers in these grades?
- c. How much is this above the average for grades 1 to 6?
- d. How many teachers in these grades have taught 10 years or more, 5 to 9 years, 2 to 5 years?
- e. How many have taught in high school? In lower grades?

4. Salary and costs.

- a. What is your maximum annual salary in these grades, exclusive of the principal? Minimum? Average?
- b. How does this average compare with that in grades 1 to 6? With that of the high school?
- c. What is your total salary account for teaching and supervision in these grammar or junior high school grades? (Divide salaries for part time work in this department on the same basis as their time was divided in C. 1. Include principals' salaries in these

totals.) In grades 1 to 6? In the high school? (Include grades 9 to 12 or 10 to 12 inclusive according to your organization, which represents the grades above your junior high school.)

- d. Indicate the salary, or the average salary where there are more than one in a given group, of each of the following: high school principal, general elementary school principal, junior high school or departmental principal.

5. Time daily in grades 7 and 8 or junior high school.

- a. What is the average number of periods each teacher conducts recitations daily? Is in charge of assembly hall or is supervising study?
- b. What is the length in minutes of recitation periods?

D. Courses of study offered and taken.

1. After each of the following subjects which you offer in the grades of your junior high or departmental school check the following data under each of the grades which you are including in the organization.

- a. In column "a" indicate whether the subject is required or elective by "R" or "E". If the subject is required in one course and elective in another indicate by "R-E".
- b. In column "b" indicate the total number of pupils taking the subject for each grade.
- c. In column "c" indicate the total number of minutes devoted to class recitation by any pupil per week for each subject.
- d. In the column marked "date" indicate by a "B" or an "S" whether the subject was introduced into this department of your school before or since 1912.
- e. Those schools that include grade 6 in this department and not the 9th will cross out the 9 at the head of the column headed "grade 6 or 9", and those having the 9th and not the 6th included will cross out the 6.

## 2. Program of studies by grades.

SUBJECT	GRADE 7			GRADE 8			GRADE 6, 9			Date
	a	b	c	a	b	c	a	b	c	
Agriculture.....										
Algebra.....										
Ancient History.....										
Arithmetic.....										
Bookkeeping.....										
Botany.....										
Civics.....										
Com. Arithmetic.....										
Com. Geography.....										
Cooking.....										
Drawing and Art.....										
Electrical Work.....										
Elementary Science.....										
English.....										
grammar and comp.....										
reading and literat'e.....										
spelling and writing.....										
Geography.....										
German.....										
History (U. S.).....										
Industrial History.....										
Iron and Metal Work.....										
Latin.....										
Mechanical Drawing.....										
Music.....										
Physical Geography.....										
Physical Training.....										
Physiology & Hygiene.....										
Plumbing.....										
Printing.....										
Sewing.....										
Stenography.....										
Typewriting.....										
Wood-work.....										
Other Subjects.....										
.....										
.....										
.....										

Note: Please enclose courses of study for grammar grades and high school, together with the statement of requirements for graduation.



## E. Advantages of and objections to junior high school organization.

1. Check whichever of the following you think represent distinct advantages of your junior high school organization as compared with other forms of 7th and 8th grade organization:
  - a. It provides greater differentiation of studies.....
  - b. It provides an easier transition to high school as regards subject matter.....methods of teaching....  
.....school discipline.... and social life  
.....
  - c. It provides for the individual needs and affords a better opportunity to the dull pupil.....to the bright pupil.....
  - d. It provides a better grounding in high school subjects such as languages and mathematics.....
  - e. It provides an earlier opportunity for vocational and prevocational subjects.....
  - f. It favors a longer retention of pupils in school.....
  - g. It makes possible the elimination of one year from the upper six years of our twelve year course.....
  - h. Indicate any other advantages.....
2. Check whichever of the following you think represent objections to the junior high school as compared with other forms of 7th and 8th grade organization:
  - a. Higher cost.....
  - b. Personal.....or community.....  
preference for the present organization.
  - c. Difficulty in securing suitable teachers.....
  - d. Distance many 7th and 8th grade pupils would have to go to reach school and cost of transportation.....
  - e. Need of more time on the three R's in these grades rather than on high school subjects for the average pupil  
.....
  - f. Scarcity of suitable text-books.....
  - g. Present building and equipment not suitable.....
  - h. School system too small to provide the differentiation of subjects called for by new plan.....
  - i. Name other objections.....

## F. Economy of time and extension of work to college grade.

1. Shortening the high school course.  
Do you think it desirable to organize the work of the junior high school or the grammar grades so as to eliminate one of the last six years of work of the twelve years' course?....., why or why not?  
.....
2. Extending the twelfth year's work to college grade.
  - a. Do you think it desirable to make the twelfth year of common school work the equivalent of college freshman work?.....

- b. Are you, in your high school, offering a year of college work?.....
- c. What subjects?.....
- d. How many hours of work a week for the pupil represent normal work in this junior college department?.....
- e. How many pupils are enrolled for this advanced work?.....
- f. What qualifications do you require for the teachers of junior college subjects in the way of academic preparation and experience above those of regular high school teachers?.....  
Is a Master of Arts degree desirable?.....  
required.....
- G. Mention new or special features of your junior (grammar grade) or senior high school organization which are proving of decided value.....

## II. A SUPPLEMENTARY QUESTIONNAIRE ON SEVENTH, EIGHTH AND NINTH GRADE ORGANIZATION IN INDIANA PUBLIC SCHOOLS.

1. What is the type of your general school organization, 8-4, 6-2-4, 6-6, 6-3-3, 7-5, 7-4, 6-5? Indicate if other plan is used.
2. Number 1, 2, 3, in order of their bearing, the controlling factors that led to your junior high school reorganization: building conditions, educational values, economy in the operation of your school system.
3. Number in the order of their relative importance (1, 2, 3, etc.) the essential features that in your judgment characterize the junior high school; close contact of certain grammar grades with the senior high school with respect to housing and the use of laboratories and equipment, a distinctive organization separate from the elementary grades and the senior high school, the use of the same teachers as for the senior high school both in academic and special subjects, opportunity for some pupils to take some high school subjects earlier as foreign languages and algebra, opportunity for pupils to take more extensive offerings in pre-vocational subjects than the minimum state requirement, provision for greater differentiation of courses than under old conditions, provision for fast and slow moving groups and classes, promotion by subject, departmental teaching, reorganized and enriched subjects of study, reorganized methods of instruction, provision for supervised study, provision for educational and vocational information and guidance, better organization of pupil social activities, opportunity for over-age pupils regardless of their previous scholastic attainments, the shortening of the period of elementary and high school training by at least one year, opportunity to discover interests and capacities, to provide training along the special lines of these capacities and interests. Add other features of importance not listed, and mark with an "X" any listed that you think are of little value.

4. a. Do you keep a systematic record of the individual traits of each pupil and of his educational and vocational and social interests?  
b. Is the individual project plan used in prevocational work in grades 7, 8 and 9?
5. For your departmental or junior high school grades indicate the number of teachers who have had less than 1 year of training beyond the high school, 1 but less than 2 years, 2 but less than 3 years, 3 but less than 4 years, 4 years, and more than 4 years.
6. Do any of your junior high school or departmental school teachers have to write for both a common school and a high school license to conform to the state law for certification? If so, does this cause you any difficulty in securing teachers for these grades? Do you know of any other provisions of the Indiana state laws or of the regulations of the State Board of Education that do or may hinder the free working out of the junior high school idea? If so, indicate them.
7. What extra-class organizations (definitely organized) do you have which are open to pupils in your junior or departmental school, as athletics, boy scouts, civic clubs, departmental clubs, general literary society, general social club, school publication, student government, musical organizations, etc.? Indicate for 7th, 8th, and 9th grades separately.
8. Indicate the types of courses in your junior high school, as academic, agriculture, commercial, home making (girls), industrial arts (boys), etc.
9. What provision do you make for unusually bright or slow pupils in junior high school grades, as the carrying of an extra subject, special help, etc.?





# VITA

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Mankato, Minnesota, December 14, 1871.
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Rural school, Beauford, Minnesota. 1877 to 1888.  
State High School, Mapleton, Minnesota. 1890 to 1893.  
University of Minnesota, Minneapolis, Minnesota. 1893 to 1897.  
Leland Stanford Jr. University, Stanford University, California. 1910-1911.  
Teachers' College, Columbia University, New York, N. Y. 1911-1912 and Feb. to June, 1917.
3. Degrees received:  
B.S. University of Minnesota. 1897.  
A.M. Leland Stanford Jr. University. 1911.
4. Titles of previous publications:
  - a. "A Tentative Revision and Extension of the Binet-Simon Measuring Scale of Intelligence", (L. M. Terman and H. G. Childs) in the Journal of Educational Psychology, Feb. to May, 1912.
  - b. "Measurement of the Drawing Ability of Two Thousand One Hundred and Seventy-seven Children in Indiana School Systems by a Supplemented Thorndike Scale," in the Journal of Educational Psychology, Sept., 1915.
  - c. "A Half-Year's Progress in the Achievement of One School System," in The Fifteenth Year Book of the National Society for the Study of Education, part I, 1916.
  - d. "Cost of Instruction in Indiana Schools and Related Problems," in the Bulletin of The Third Conference on Educational Measurements, Indiana University, Feb., 1917.
  - e. "The Measurement of Achievement in Algebra," in the Bulletin of The Third Conference on Educational Measurements, Indiana University, Feb., 1917.
  - f. "A Study of Enrollment, Acceleration, Retardation and Normality," in the Bulletin of The Third Conference on Educational Measurements, Indiana University, Feb., 1917.
  - g. "The Per Cent of Failures in High School," in the Bulletin of The Third Conference on Educational Measurements, Indiana University, Feb., 1917.
  - h. "The Results of Practice Teaching as Conducted at the University of Indiana for the Years 1908-9 to 1913-4 inclusive," in Educational Monographs, number VII, of the Society of College Teachers of Education, 1916.







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